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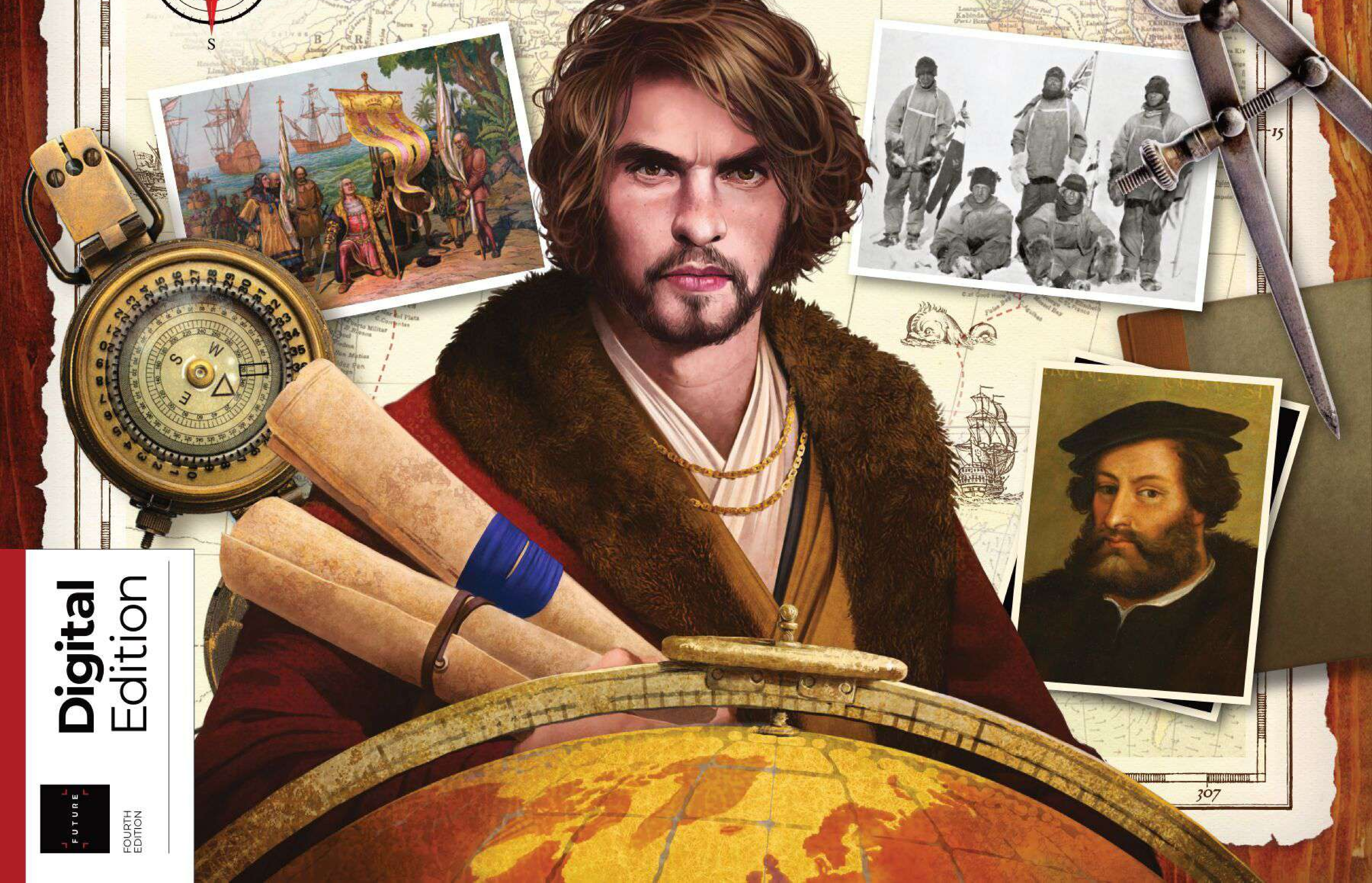
ALL ABOUT HISTORY

BOOK OF

GREAT EXPLORERS

The stories behind the legendary adventurers
and journeys that changed the world



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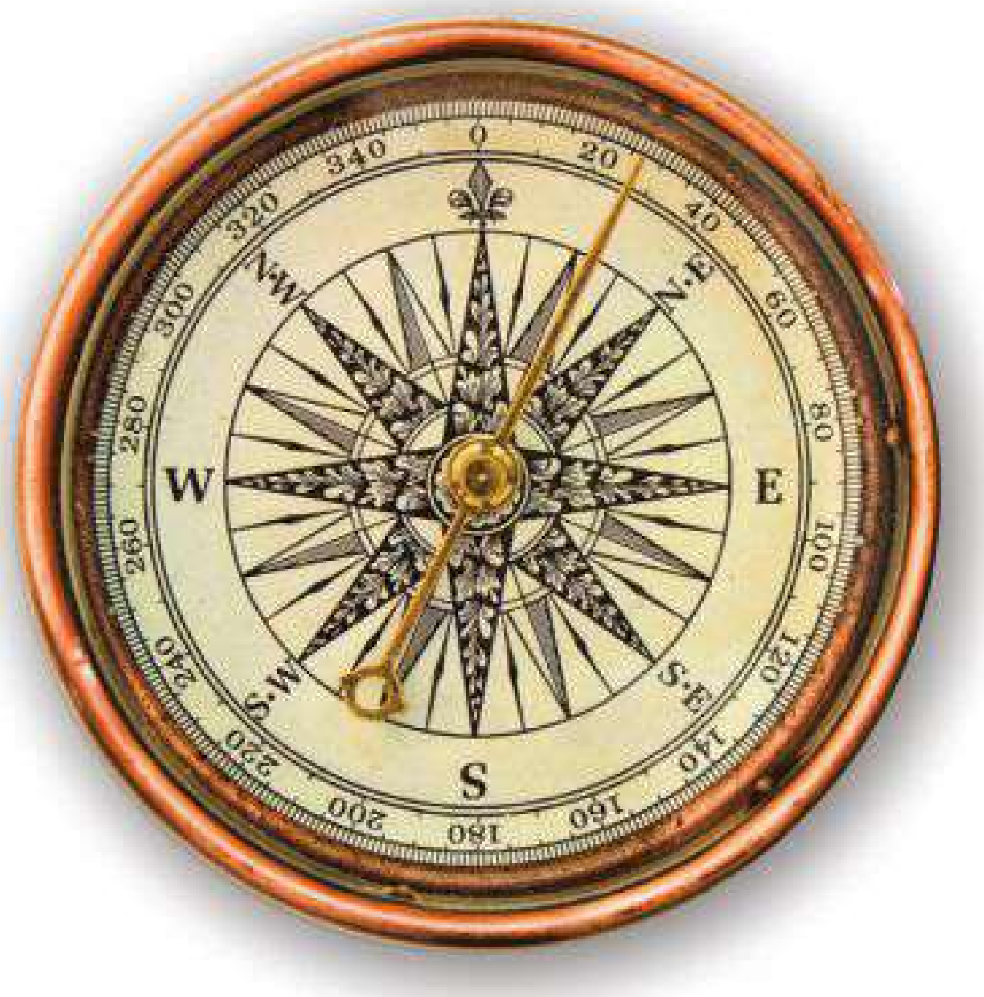

Welcome to

ALL ABOUT HISTORY

BOOK OF

GREAT EXPLORERS

Here be dragons...

For centuries, dragons, monsters and sea serpents lurked on the edges of maps, inhabiting unknown and uncharted territory and threatening the safety of every bold traveller launching an expedition.

Great Explorers delves into the stories and legends of history's greatest adventurers, to shine a light on their remarkable achievements – and their failings. Learn about the Medieval voyagers who managed to push boundaries without the benefit of modern technology, such as the Viking Leif Erikson reaching the coast of North America, and Ibn Battuta documenting the Islamic world in a 30-year journey. Trace the origins of the Age of Discovery, a time when European sailors embarked on dangerous voyages to the New World and discovered new routes to the Old. Finally, explore the gruelling modern journeys that took exploration to a whole new level, including Scott and Amundesen's race to the South Pole, and Neil Armstrong's monumental 'one small step'. Packed with incredible images and insightful maps, this is the perfect companion for anyone with a case of historic wanderlust.

FUTURE

BOOK OF

GREAT EXPLORERS

Future PLC Quay House, The Ambury, Bath, BA1 1UA

Bookazines Editorial
Compiled by **Drew Sleep & Emma Wood**
Senior Art Editor **Andy Downes**
Head of Art & Design **Greg Whitaker**
Editorial Director **Jon White**

All About History Editorial
Editor **Jonathan Gordan**
Senior Designer **Kym Winters**
Editor in Chief **Tim Williamson**
Senior Art Editor **Duncan Crook**

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International
Head of Print Licensing **Rachel Shaw**
licensing@futurenet.com
www.futurecontenthub.com

Circulation
Head of Newstrade **Tim Mathers**

Production
Head of Production **Mark Constance**
Production Project Manager **Matthew Eglinton**
Advertising Production Manager **Joanne Crosby**
Digital Editions Controller **Jason Hudson**
Production Managers **Keely Miller, Nola Cokely,**
Vivienne Calvert, Fran Twentyman

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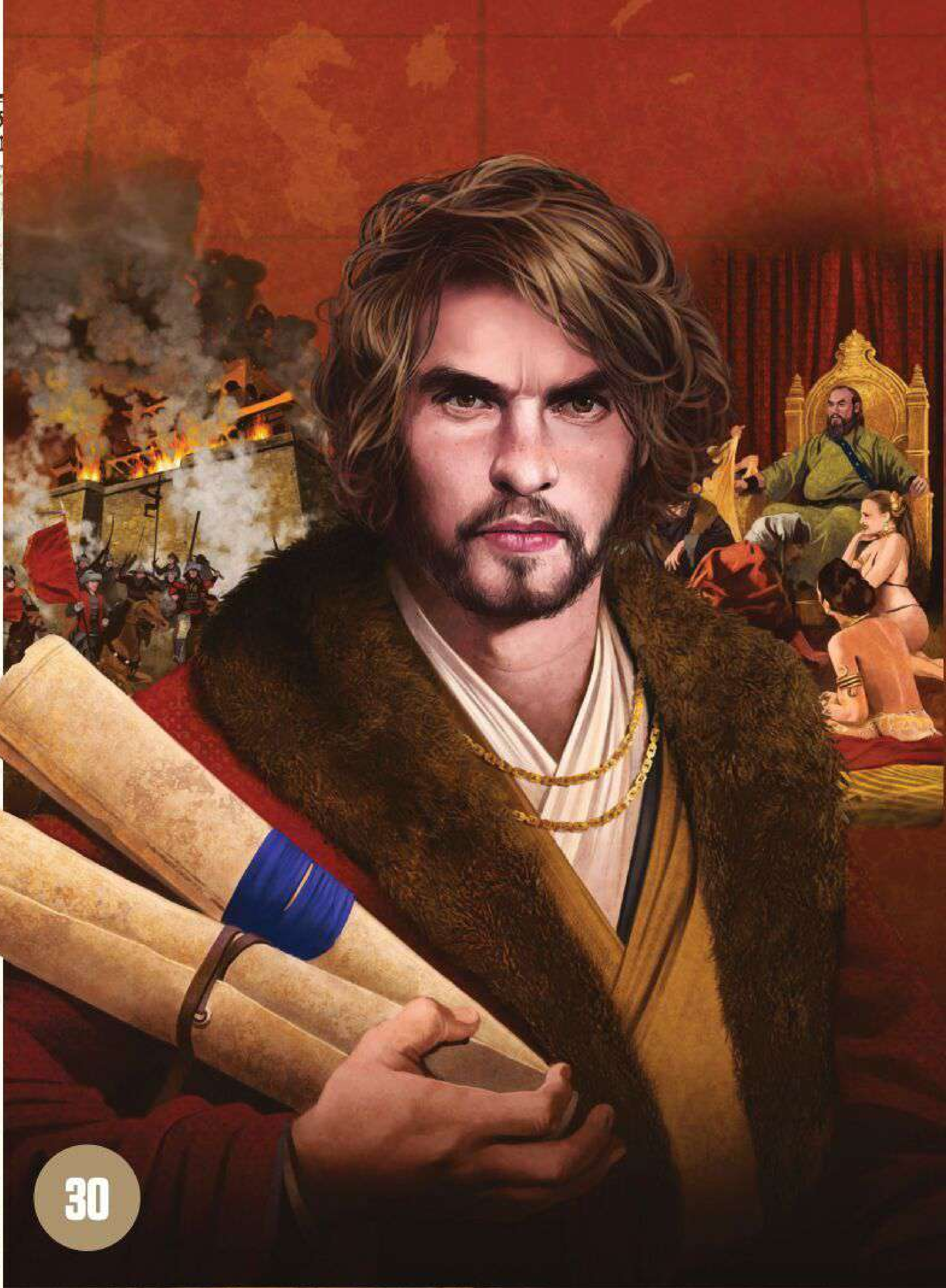
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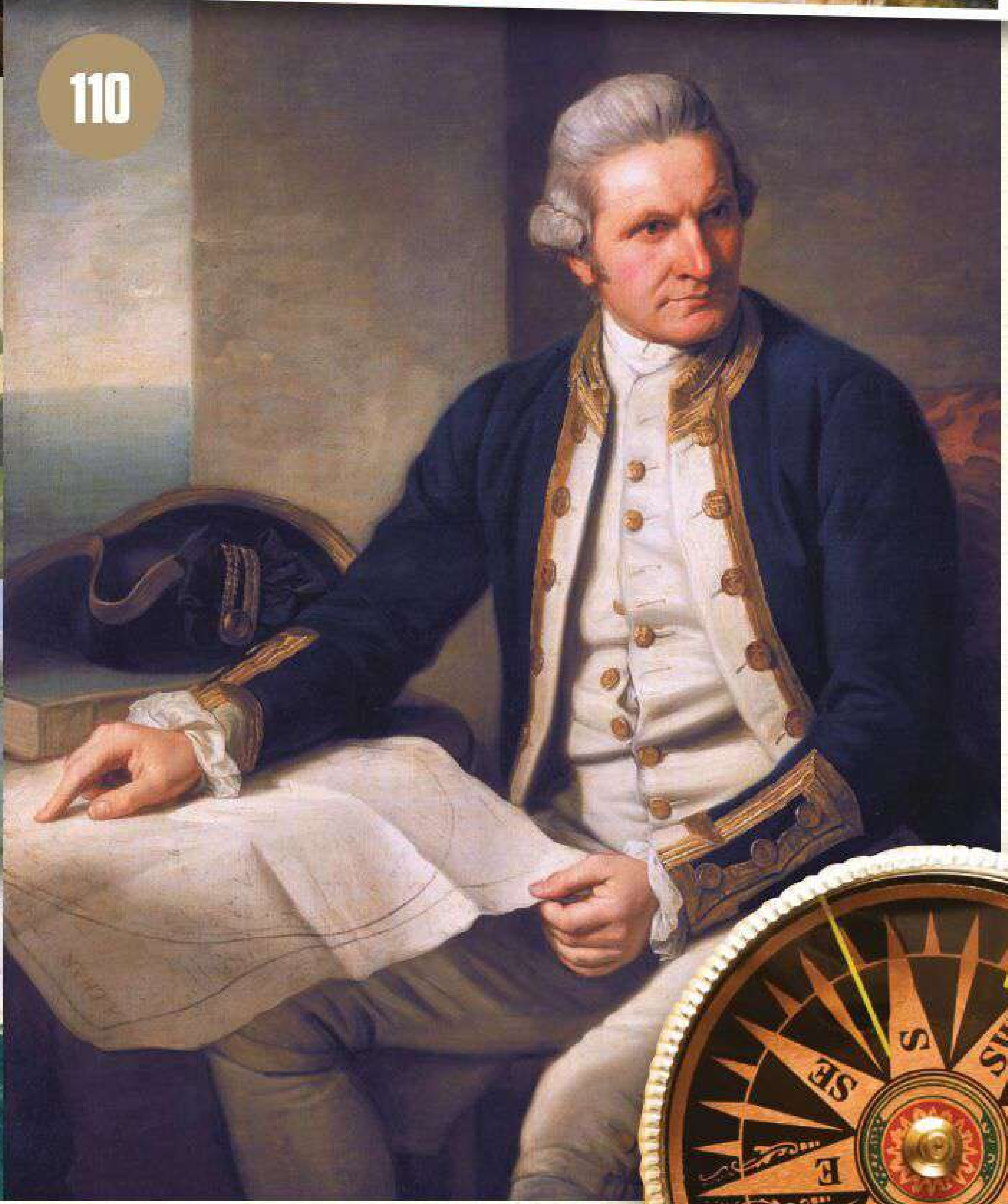

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One small step was humanity's greatest achievement

10 Incredible Expeditions

Since the dawn of civilisation, humans have reached into the unknown. Pushing boundaries and finding new frontiers, these 10 expeditions are indicative of the boundless reach of the human spirit of discovery

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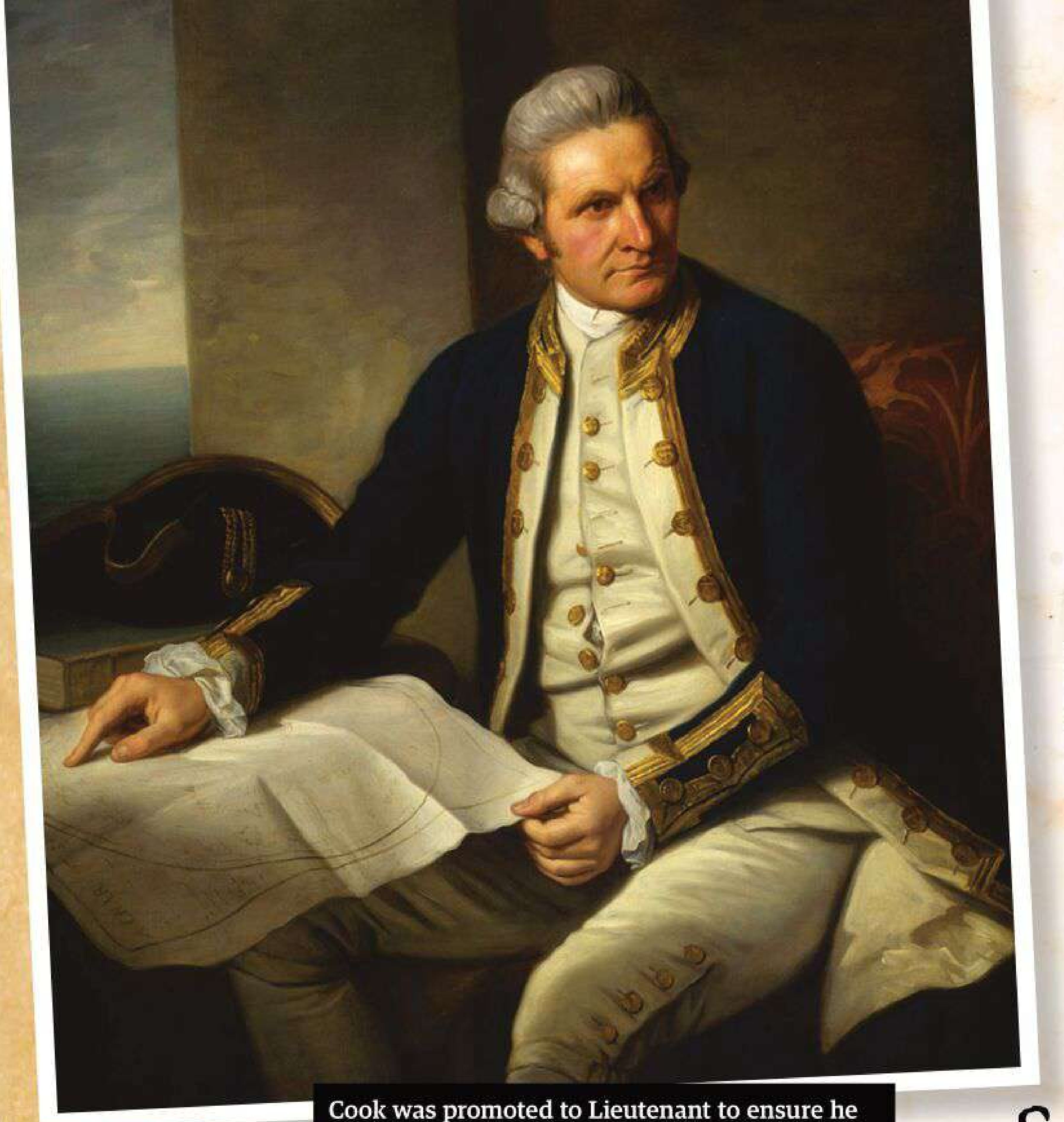


Cook was promoted to Lieutenant to ensure he had the authority to command the expedition

James Cook's first voyage

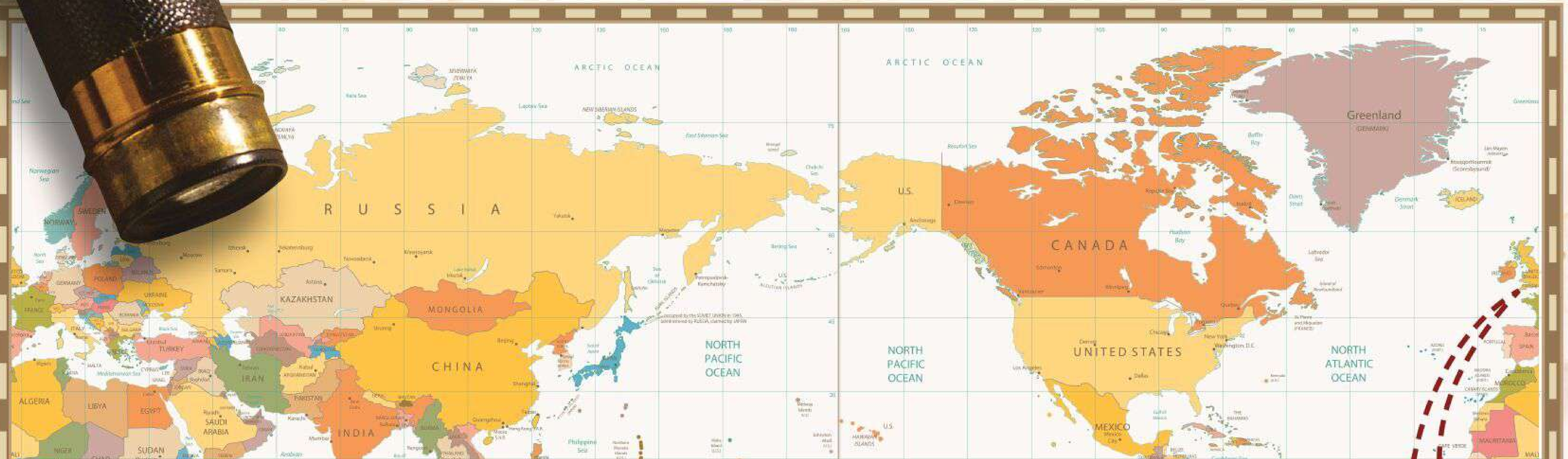
1768-1771

Southern reaches of the Pacific Ocean

Commissioned by King George III of Great Britain with seeking an unknown southern land and charting the course of the planet Venus across the Sun, James Cook set sail aboard his ship, HMS Endeavour, from Plymouth in the summer of 1768. It was the first of three voyages to the Pacific.

Cook crossed the Atlantic, rounded Cape Horn at the tip of South America, and reached Tahiti, where the movement of Venus was observed. Heading south into virtually uncharted waters, he claimed several small islands for Britain and made landfall in New Zealand in September 1769. Cook's was the second European expedition to reach New Zealand, 127 years after Dutch explorer Abel Tasman.

After mapping the coastline of New Zealand for six months, Cook moved on to Australia, the first European to reach its east coast, at Point Hicks and then Botany Bay. Sailing north along the Australian coastline, Cook nearly met disaster as HMS Endeavour was damaged off the Great Barrier Reef. Repairs were made at Batavia in the Dutch East Indies. Cook sailed for home, rounding the Cape of Good Hope in March 1771. The 35-month journey ended at the port of Deal, England, on 12 July.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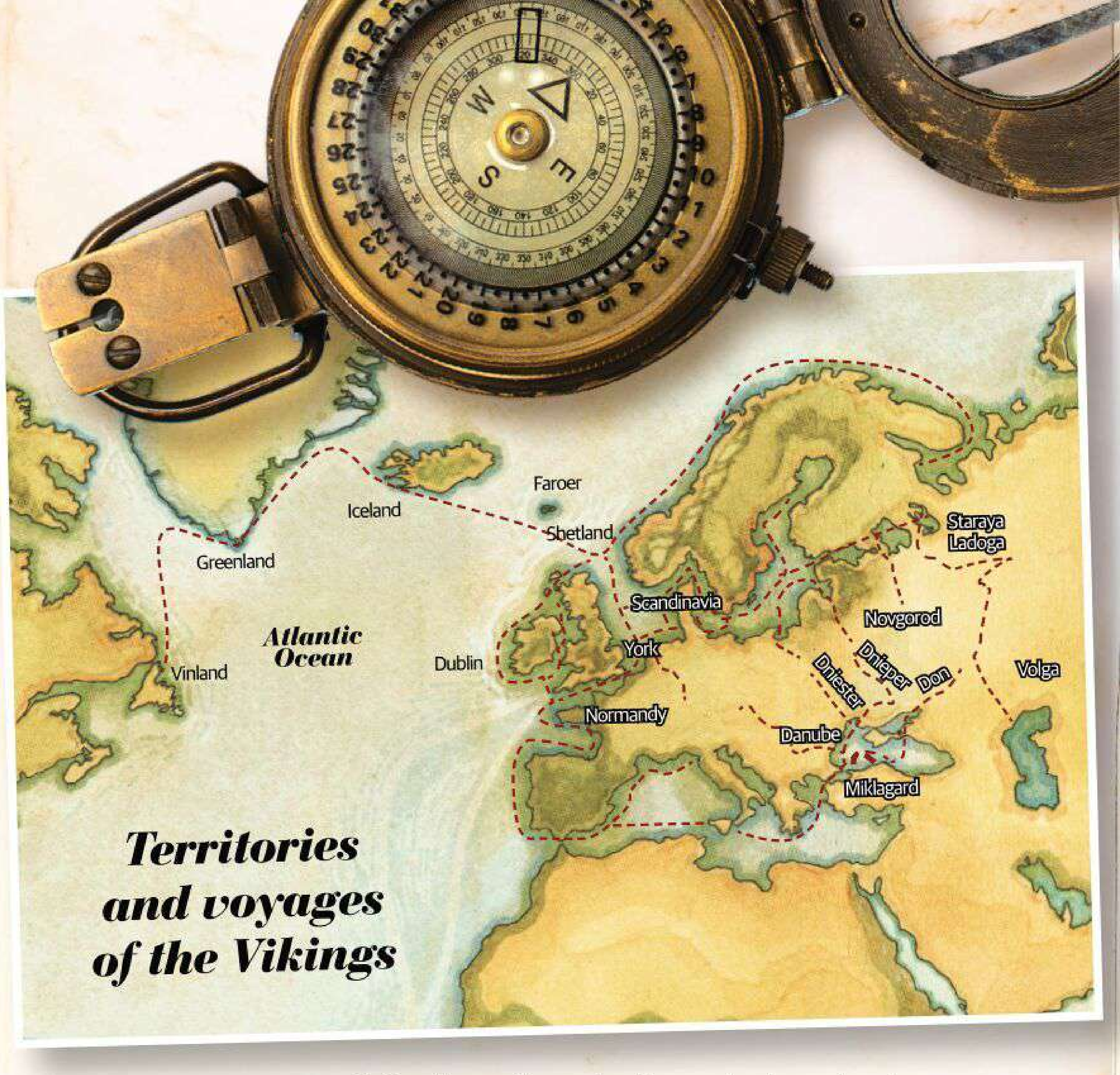
NORTH PACIFIC OCEAN
NORTH PACIFIC OCEAN
SOUTH PACIFIC OCEAN
Greenland
CANADA
U.S.
UNITED STATES
MEXICO
BRAZIL
NORTH ATLANTIC OCEAN
SOUTH ATLANTIC OCEAN

Cook's route included the south east coast of Australia, making him and his crew the first recorded Europeans to visit its east coast

Leif Erikson establishes Vinland

— 1000 —

Establishment of Norse colony in North America at Vinland


Greenland
Iceland
Faroer
Shetland
Staraya Ladoga
Scandinavia
Novgorod
Atlantic Ocean
Vinland
Dublin
York
Dnieper
Dniester
Don
Volga
Normandy
Danube
Miklagard

Territories and voyages of the Vikings

The son of Erik the Red, the Viking explorer who originally colonised Greenland, Leif Erikson sailed from there toward Norway in the year 999, landing first in the Hebrides and remaining for several months. Upon arrival in Norway, Erikson was converted to Christianity by King Olaf I Tryggvason and commanded to return to Greenland to introduce the religion there.

Accounts differ on the details of Erikson's subsequent voyage. One holds that he sailed off-course and inadvertently made landfall in North America. A second and probably more reliable story relates that Erikson was aware of a vast land east of Greenland from the oral accounts of an Icelandic explorer and trader, Bjarni Herjulfsson, who had seen North America 14 years earlier after being blown off course during a storm but had not gone ashore.

Sometime around the year 1000, Eriksson sailed north from southern Greenland with a crew of 35 men and turned south along the coast of Baffin Island. After initially landing on the southern coast of Baffin Island, he continued to Labrador and eventually reached a region he called Vinland because of the abundance of wild grape vines growing there. Although scholars debate the precise location of Vinland, it is probably somewhere along the southern coast of Newfoundland, where archaeological excavations conducted in the 1960s confirm the existence of an 11th century Viking settlement.

Eriksson, credited by many as the first European to discover the New World, returned to Greenland in the spring of 1002 and died c.1020.

Scott and Amundsen race to the South Pole

— 1911-1912 —

South Pole, Antarctica

"Beg leave to inform you... proceeding Antarctic. Amundsen." When British adventurer Robert Falcon Scott received the brief letter from Norwegian explorer Roald Amundsen, he realised the race was on. The goal was the South Pole, perhaps the last great objective of terrestrial exploration.

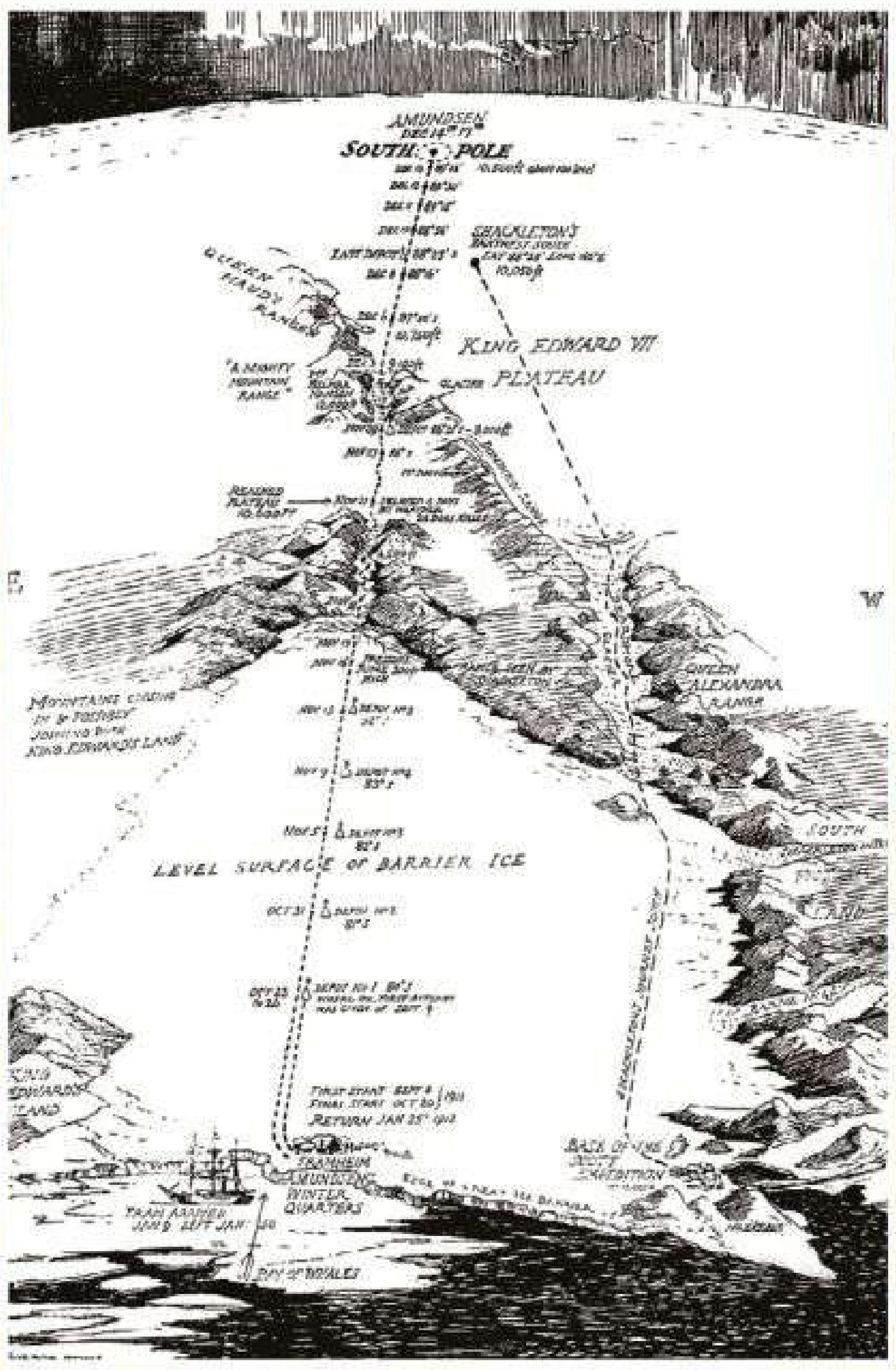
October 1910, and Amundsen had been beat to the North Pole. So he changed his objective to the South Pole without initially telling his sponsors or his crew. Scott, a Royal Navy officer, was asked to conduct a scientific survey of the region but declared his intent to "reach the South Pole and to secure for the British Empire the honour of this achievement." When Amundsen's letter arrived, he was in Australia making preparations.

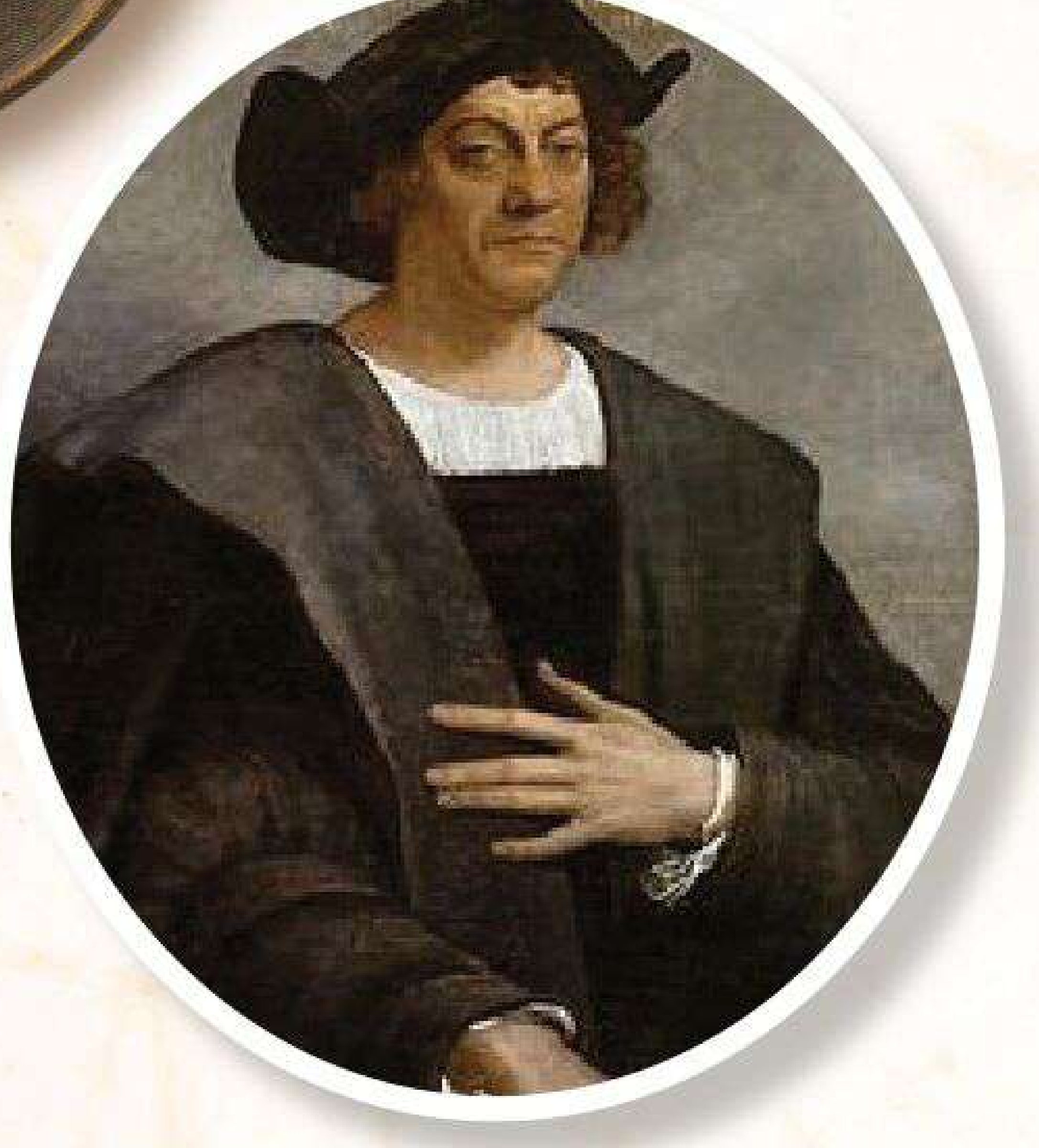
As both parties reached Antarctica, newspapers were touting the "race to the South Pole." Amundsen established his base camp at the Bay of Whales, about 60 miles closer to the South Pole than Scott, who was located at McMurdo Sound. When weather conditions became favourable enough, the 39-year-old Norwegian was first to head toward the objective in September. However, extreme sub-zero temperatures forced him to turn back. Amundsen set out again on 20 October, 1911. Scott followed on 24 October.

Using skis and dog sled teams, Amundsen made remarkable progress, covering more than 20 miles a day. The Norwegians plotted an unused route, crossing the Axel Heiberg Glacier and the Polar Plateau. They reached the South Pole on 14 December, smoked cigars, raised the Norwegian flag and took photos. After a few days, they left.

Scott's group started with ponies, sled dogs, and some motorised sledges, which broke down. The ponies weakened and were shot. Much energy was spent manhandling the sledges along the treacherous route. On 17 January 1912, 34 days after Amundsen's team, Scott arrived at the South Pole only to find the Norwegian camp. Crestfallen, the British remained briefly and turned back.

Late summer brought incredible cold to Antarctica, and Scott perished with four other men during their homeward trek. For their gallant effort, Scott and his cohorts became heroes in Britain as Amundsen achieved world acclaim.


AMUNDSEN DEC 14TH 11
SOUTH POLE
SHACKLETON'S FARTHEST SOUTH
KING EDWARD VII PLATEAU
"A MIGHTY MOUNTAIN RANGE"
QUEEN MAUD'S RANGE
W
E
QUEEN ALEXANDRA RANGE
LEVEL SURFACE OF BARRIER ICE
FIRST START SEPT 8 1911
FINAL START OCT 20 1911
RETURN JAN 25TH 1912
FRAMHEIM
AMUNDSEN'S WINTER QUARTERS
BASE OF THE SCOTT EXPEDITION
BAY OF WHALES
KING EDWARD VII LAND
SOUTH



Christopher Columbus reaches the Americas

1492-1493

Discoveries in the West Indies and Caribbean

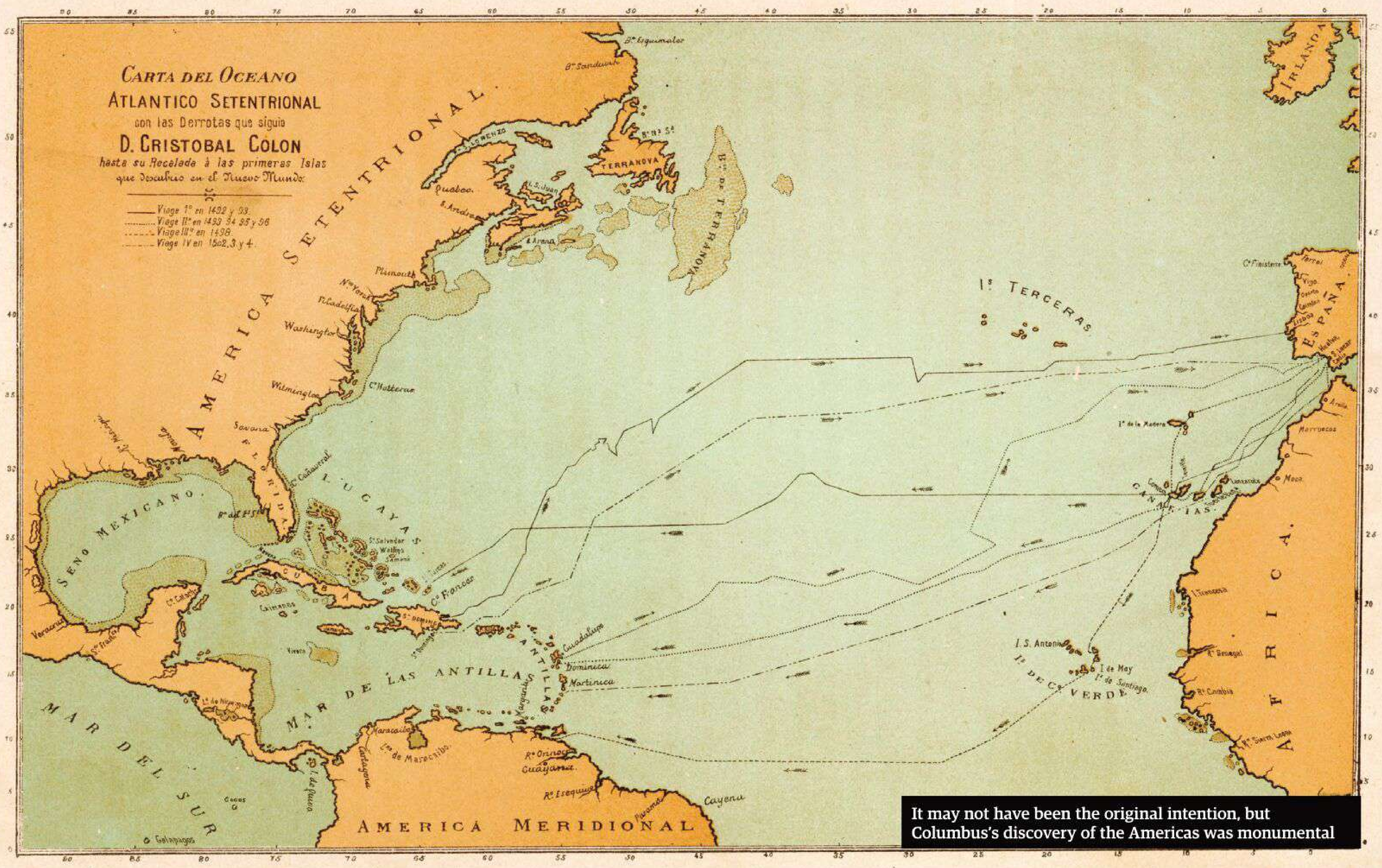
Convinced that sailing west would result in the discovery of a passage to Asia and a much less arduous trek to its riches than overland routes through the Middle East, Italian-born Christopher Columbus sought sponsors but was rebuffed by the monarchs of Portugal and England. However, in 1491 he gained the patronage of King Ferdinand and Queen Isabella of Spain. All three were ardent Roman Catholics, and along with the gold, silver, spices, and other luxuries of the Orient, they hoped to spread their faith.

On 3 August 3 1492, Columbus set sail from the Spanish port of Palos with three ships; Santa Maria, Nina, and Pinta. In early September the small flotilla provisioned in the Canary Islands. The voyage proved longer than anticipated, and Columbus narrowly managed to prevent mutiny. On 12 October, a lookout sighted land. Rather than the Asian continent, Columbus set foot on an island of the Bahamas in the eastern Caribbean.

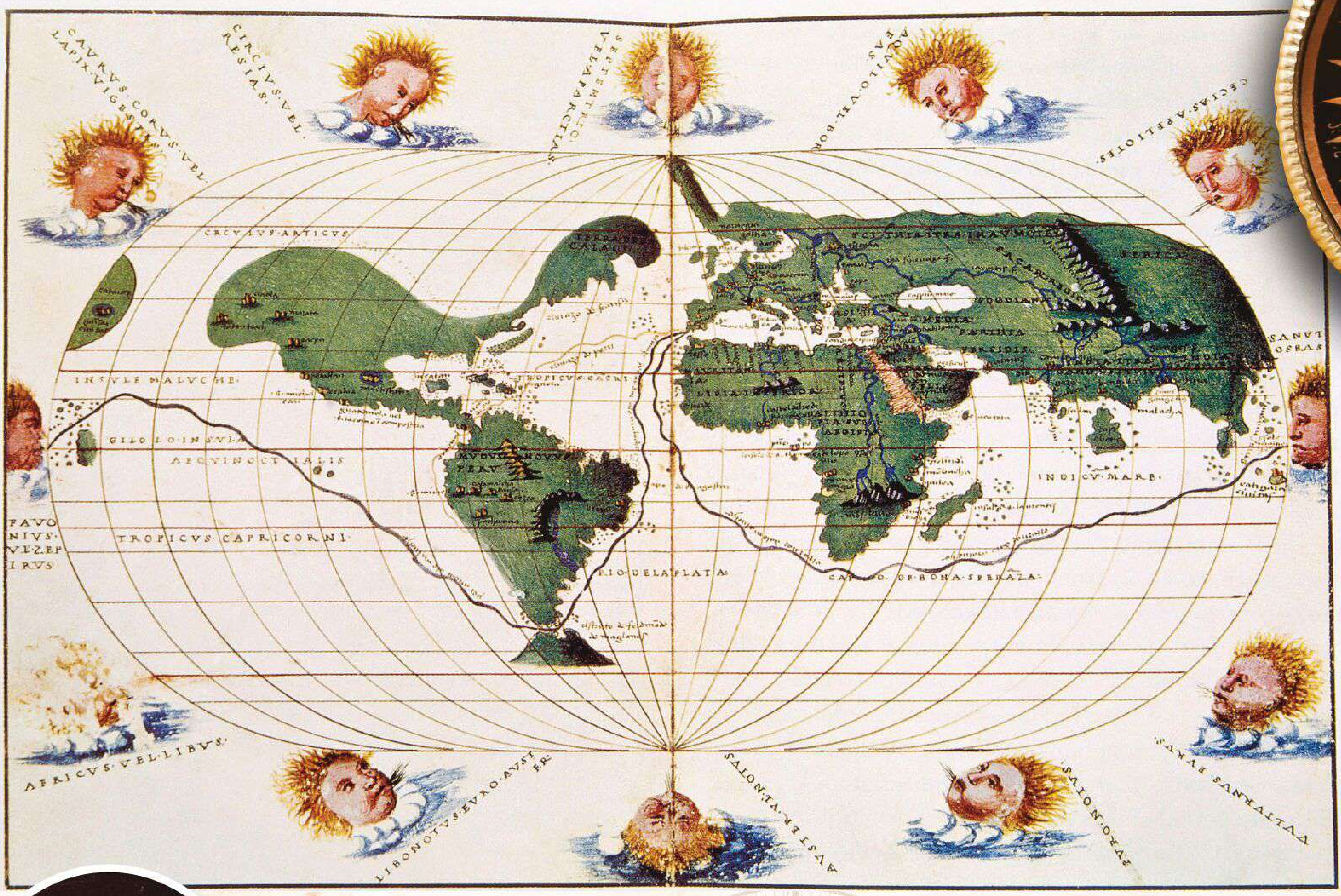
Although the original log of the voyage has been lost, a reliable reconstruction relates, "The vessels were hove to, waiting for daylight, and on Friday they arrived at a small island of the Lucayos… Presently, they saw naked people… The Admiral took the royal standard, and the captains went with two banners of the green cross… Having landed, they saw trees very green, and much water and fruits of diverse kind."

Believing he had come ashore in India, Columbus called the natives "Indians." Although the land was lush, the explorer vainly continued his search for the continent of Asia. Sailing among the islands, he found nothing to raise his hopes. By the end of the year, Columbus had explored the northern coast of Cuba and reached the large island of Hispaniola. On Christmas Day, Santa Maria ran aground and was abandoned. During further exploration of Hispaniola, the expedition encountered hostile natives. A brief skirmish ensued. Nevertheless, Columbus left 40 men to establish a settlement, which was later destroyed.

In January 1493, Columbus sailed for Spain aboard the Nina, which became separated from the Pinta in a storm. Stopping in the Azores and Portugal, the disappointed explorer arrived in Palos on 14 March 1493. He returned to the New World later in 1493 and again in 1498 and 1502. Although he failed to achieve his objective of a trade route, Columbus spurred interest in further exploration of the Americas, with far-reaching consequences.


Carta del Oceano
Atlantico Setentrional
con las Derrotas que siguio
D. Cristobal Colon
hasta su Recalada á las primeras Islas
que descubrio en el Nuevo Mundo
Viage 1° en 1492 y 93.
Viage II° en 1493 94 95 y 96
Viage III° en 1498
Viage IV en 1502, 3 y 4.
America Setentrional
Terranova
Is. Terceras
España
Irlanda
Lucayas
Cuba
Seno Mexicano
Mar de las Antillas
Mar del Sur
America Meridional
Africa
Canarias
Is. de Cabo Verde
Washington
Wilmington
Plimouth
Quebec
Savana
Florida
Guadalupe
Dominica
Martinica
Guayana
Cayena

It may not have been the original intention, but Columbus's discovery of the Americas was monumental



Ferdinand Magellan circumnavigates the globe

1519-1522

A voyage around the world

Considered a traitor to his native Portugal, Ferdinand Magellan found the patronage of Spanish King Charles I and embarked on a westward voyage in search of an ocean route to the East Indies, known then as the Spice Islands, the source of valuable spices coveted in Europe for supposed curative powers, food tasting and preservative qualities.

In command of five ships and 270 men, Magellan set sail westwards from Sanlucar de Barrameda, Spain, on 20 September 1519, crossing the Atlantic to Brazil and arriving at the bay of Rio de Janeiro on 13 December. Magellan skirted the South American coast through the estuary of Rio de la Plata, searching for an ocean passage beyond the continent.

Two Spanish ship captains mutinied on Easter Sunday, 1520. Magellan managed to quash the insurrection. One captain was executed and the other marooned as the ships sailed south. In October, Magellan found the passage that would bear his name. The gruelling transit of the Strait of Magellan required 38 days.

The first European explorer to see the vast expanse of water beyond the strait, Magellan anticipated a short voyage across a calm sea, which he named Mar Pacifico, or the Pacific Ocean. However, the voyage proved much longer. The crew suffered from scurvy, and food stores were exhausted. Finally, on 6 March 1521, the expedition reached Guam.

Magellan then headed for the Philippines and reached Cebu, about 400 miles from the Spice Islands. Welcomed by the local chieftain, who he converted to Christianity, Magellan was persuaded to help in the fight with a neighbouring tribe on the island of Mactan. Magellan was wounded by a poison arrow and died on 27 April 1521.

The surviving crew pressed on, arriving in the Moluccas on 8 November 1521. The holds of the two remaining ships were filled with spices, and the expedition proceeded to Timor. From there, one went west, while the other went east and was lost.

Completing the voyage, the single ship Victoria rounded the Cape of Good Hope on 22 May 1522, and reached Sanlucar de Barrameda under the command of navigator Juan Sebastian de Elcano on 6 September. Only 18 original members of the expedition survived.

Magellan is credited with the circumnavigation of the globe. However, the route to the Spice Islands was too problematic. Nevertheless, it opened a huge region to further exploration and indicated that the Earth was much larger than previously believed.

Marco Polo travels to the court of Kublai Khan

1271-1295

Visiting the reaches of the Mongol Empire and East Asia

Perhaps the most famous traveller in Western history, Marco Polo, son of a Venetian nobleman, journeyed for 24 years, becoming a favourite of Mongol Emperor Kublai Khan and recording his experiences in a renowned book called simply, *The Travels*.

Marco Polo began his journey at about 17 years of age. With his father and uncle, Niccolo and Maffeo Polo, Marco crossed thousands of miles, much of the trek along the Silk Road, a famed East-West trade route. The elder Polo men had previously travelled to China and returned as emissaries of Kublai Khan.

Marco Polo was born in 1254, while his father was in the East. The two did not meet until Niccolo's return in 1269. Two years later, Niccolo, Maffeo, and Marco sailed from Venice to Acre in present-day Israel. They visited Jerusalem, procuring holy oil as a gift from Pope Gregory X to Kublai Khan.

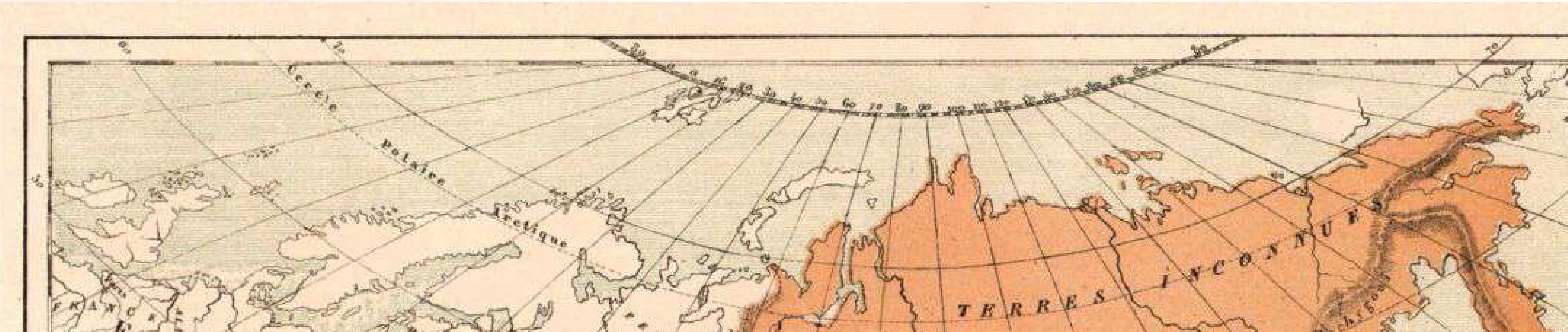
The Venetians journeyed to Hormuz in Persia, intending to continue their trek by sea. However, they had no faith in the available boats, which Marco remembered as "wretched affairs… only stitched together with twine made from the husk of the Indian nut," and decided on an overland route.

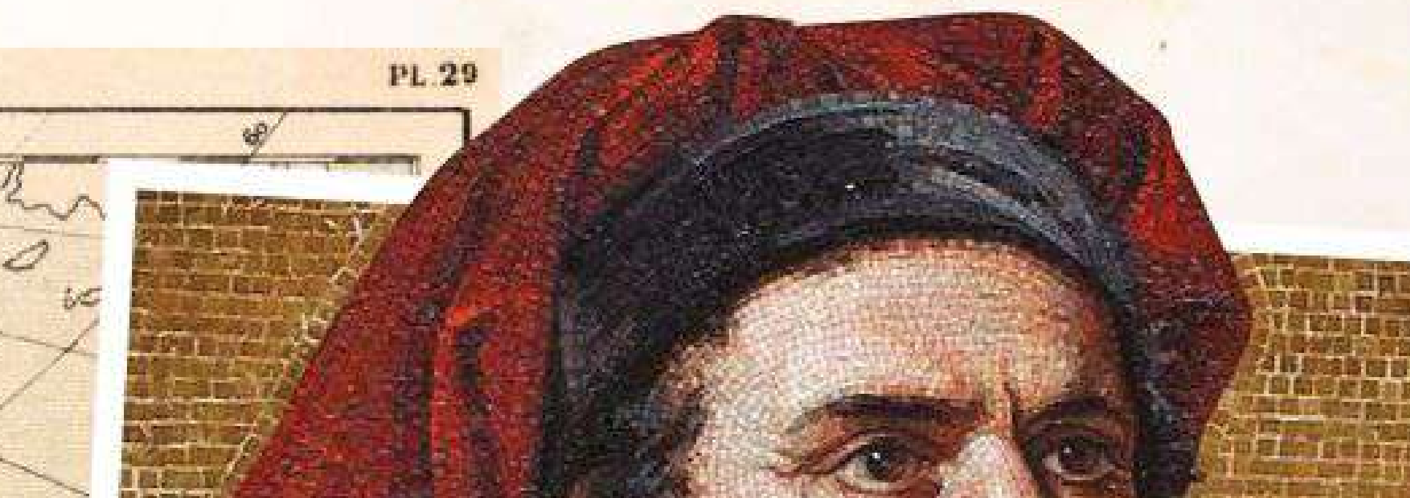
In 1275, the travellers were welcomed to Kublai Khan's summer residence at Shangdu. Niccolo introduced Marco, and the Khan embraced the young man, taking him into his court at the capital of Beijing, where Marco likely served as a tax collector. He travelled throughout China, serving as an envoy to present-day Myanmar.

After years in Kublai Kahn's court, the Venetians departed China by ship, stopping in Sumatra, and reaching Persia in 1294. After nine months, they resumed their homeward trek through Constantinople and Greece, arriving in Venice a year later.

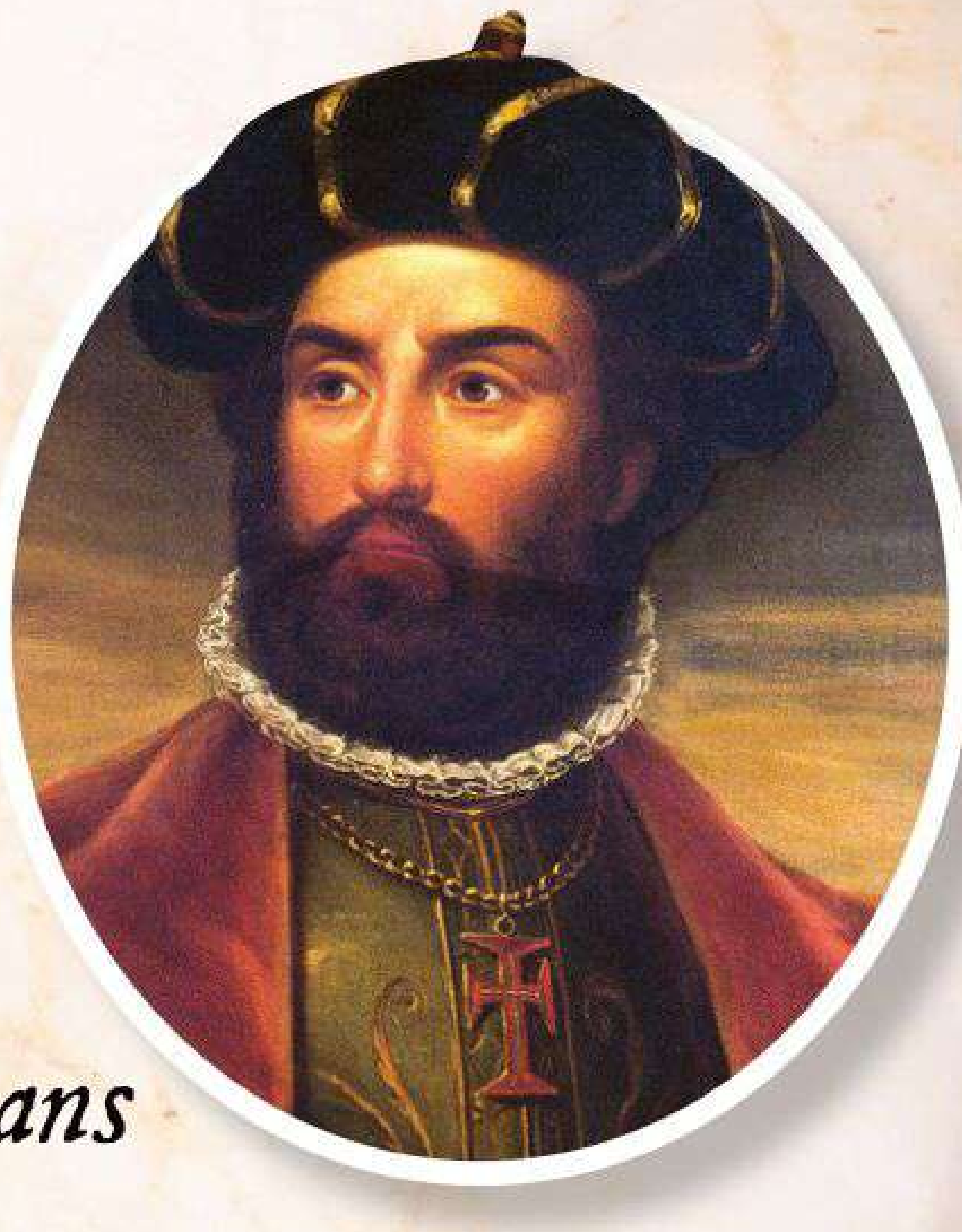
Venice was at war with the rival city-state of Genoa, and Marco was captured in battle. While in prison, he dictated a record of his travels to a fellow prisoner, Rustichello of Pisa. Completed in 1298, the story was published originally as *Description Of The World*. Marco mentioned Oriental customs, practices, and innovations such as paper currency and eyeglasses.

Although some sceptics doubt the total truth of the stories, particularly since Marco Polo is not mentioned in Chinese records, most of the Venetian traveller's revelations are corroborated by various historical sources. His account inspired others to venture into the unknown, and Marco Polo remains an icon of world exploration.





Marco Polo's adventures have inspired many explorers to follow in his footsteps



Vasco da Gama reaches India by sea

1497-1499

Passage from Europe to India via Atlantic and Indian Oceans

In search of a sea route from Europe to India, Vasco da Gama, a Portuguese nobleman, set sail from Lisbon on 8 July 1497. His quest was critical to the Portuguese economy since much of the eastern Mediterranean and the Middle East were under the control of hostile Islamic regimes, rendering overland trade routes quite hazardous.

Commissioned by King Manuel I, da Gama led four ships and approximately 200 men. The squadron sailed a known route near the Canary and Cape Verde islands to West Africa, and then ventured into the open sea to reach strong westerly winds discovered by Bartolomeu Dias a decade earlier. In December 1497, da Gama rounded the Cape of Good Hope. He reached East Africa the following spring, visiting present-day Mozambique and Kenya, where the Muslim peoples received the Europeans with general suspicion.

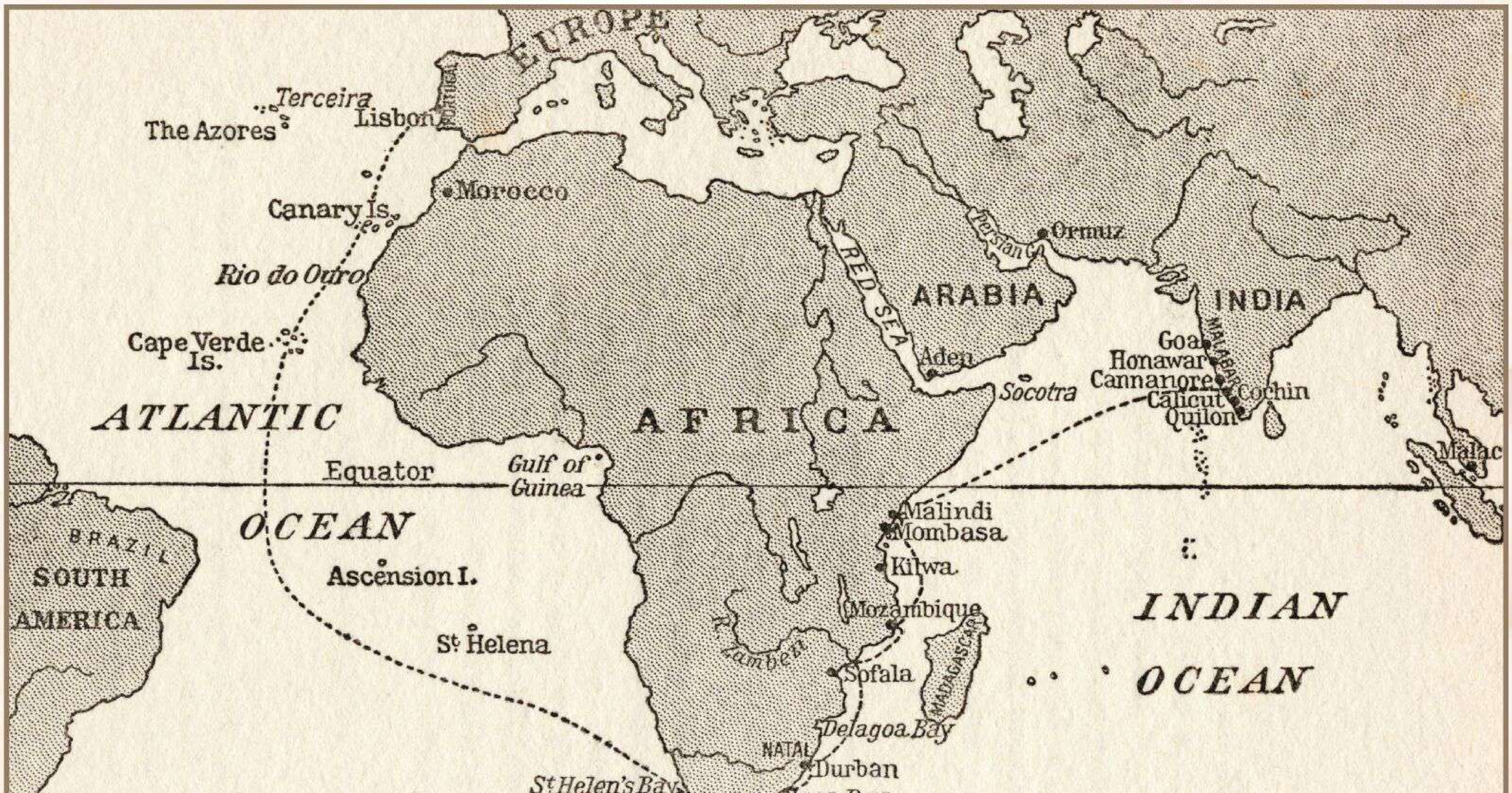
The Portuguese were forced to flee the harbour in Mozambique, firing their ships' cannon as they sailed away. In need of supplies, they resorted to piracy, taking provisions from Muslim trading ships they happened upon.

At the port city of Malindi in Kenya, da Gama encountered Indian merchants and traders, who described the sea route to the subcontinent. Da Gama hired an Indian navigator familiar with the route. Crossing the Indian Ocean, the Portuguese reached the port of Calicut on 20 May 1498. Along the way, they had become the first Europeans to successfully complete the seaborne journey to India while also sailing further and longer out of sight of land than any previous expedition.

Although reaching India was in itself a triumph, da Gama failed to establish good relations with the Hindu population. No trade agreement was concluded, and the Portuguese sailed for home on 29 August 1498. After an arduous, 132-day crossing of the Indian Ocean, they arrived at Malindi. Half of da Gama's company had died of scurvy, and only two ships remained to traverse the Cape of Good Hope in March 1499. The ships separated; however, both reached Portugal in the summer.

Da Gama decided to remain behind in the Cape Verde Islands with his brother, Paulo, who was seriously ill. After Paulo's death, da Gama buried his brother in the Azores, finally reaching Lisbon on 29 August 1499.

Although he didn't manage a trade agreement, da Gama's voyage facilitated future Portuguese expeditions, and profitable trade with India and the Orient was established. Further, his expedition paved the way for the expansion of multiculturalism and continued discoveries.


EUROPE
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Rio do Ouro
Cape Verde Is.
ATLANTIC
Equator
OCEAN
Gulf of Guinea
BRAZIL
SOUTH AMERICA
Ascension I.
St Helena
Tristan da Cunha
St Helen's Bay
Cape of Good Hope
Mossel Bay
Port Elizabeth
Algoa Bay
Durban
NATAL
Delagoa Bay
Sofala
R. Zambezi
MADAGASCAR
Mozambique
Kilwa
Mombasa
Malindi
AFRICA
RED SEA
ARABIA
Aden
Socotra
Persian
Ormuz
INDIA
MALABAR
Goa
Honawar
Cannanore
Calicut
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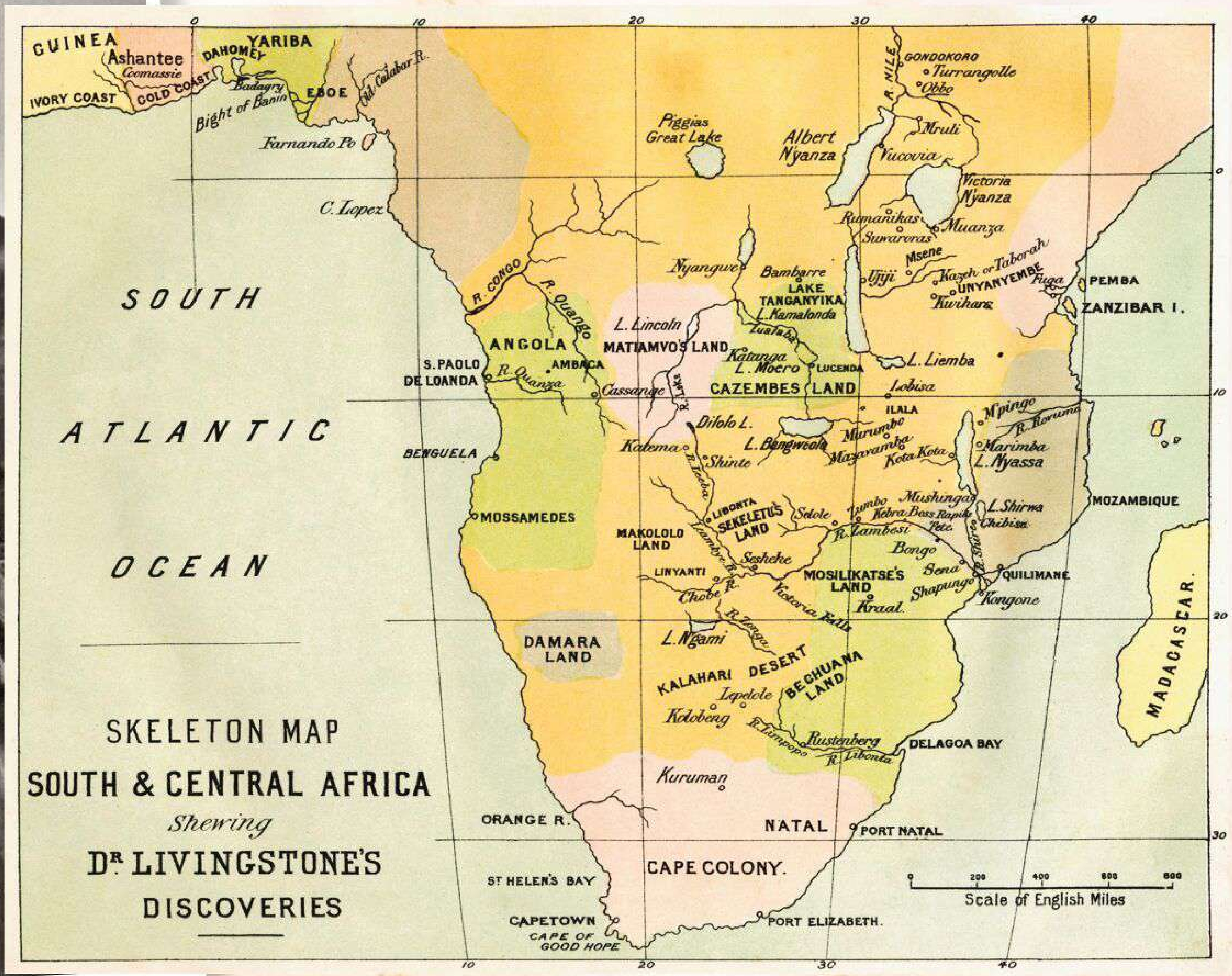
da Gama's expedition helped Portugal set up trade with India and the Orient

Livingstone mixed a love of exploring with a passion for spreading the Christian Gospel


SKELETON MAP
SOUTH & CENTRAL AFRICA
Shewing
Dr. LIVINGSTONE'S
DISCOVERIES
SOUTH
ATLANTIC
OCEAN
GUINEA
Ashantee
Coomassie
IVORY COAST
GOLD COAST
DAHOMEY
YARIBA
Badagry
Bight of Benin
EBOE
Old Calabar R.
Fernando Po
C. Lopez
R. CONGO
R. Quango
ANGOLA
S. PAOLO DE LOANDA
AMBACA
R. Quanza
Cassange
BENGUELA
MOSSAMEDES
DAMARA LAND
ORANGE R.
ST HELEN'S BAY
CAPETOWN
CAPE OF GOOD HOPE
CAPE COLONY.
PORT ELIZABETH.
NATAL
PORT NATAL
Kuruman
KALAHARI DESERT
BECHUANA LAND
Kolobeng
Lepelole
R. Limpopo
Rustenberg
R. Libonta
DELAGOA BAY
L. Ngami
LINYANTI
MAKOLOLO LAND
SEKELETU'S LAND
Sesheke
Chobe R.
Victoria Falls
R. Zambesi
MOSILIKATSE'S LAND
Kraal
Sena
Shupanga
QUILIMANE
Kongone
Tete
Bongo
L. Shirwa
Chibisa
L. Nyassa
MOZAMBIQUE
MADAGASCAR
Marimba
Kota Kota
M'pingo
R. Rovuma
L. Bangweolo
Shinte
Dilolo L.
Katema
L. Moero
CAZEMBES LAND
LUCENDA
MATIAMVO'S LAND
L. Lincoln
Nyangwe
Bambarre
LAKE TANGANYIKA
Ujiji
Kazeh or Taborah
UNYANYEMBE
PEMBA
ZANZIBAR I.
Kwihara
L. Liemba
ILALA
Piggias Great Lake
Albert Nyanza
Victoria N'yanza
R. NILE
GONDOKORO
Obbo
Mruli
Muanza
Msene
Scale of English Miles
0
200
400
600
800
10
20
30
40

David Livingstone attempts to discover the source of the Nile

1849-1873

Exploration of the interior of the African continent

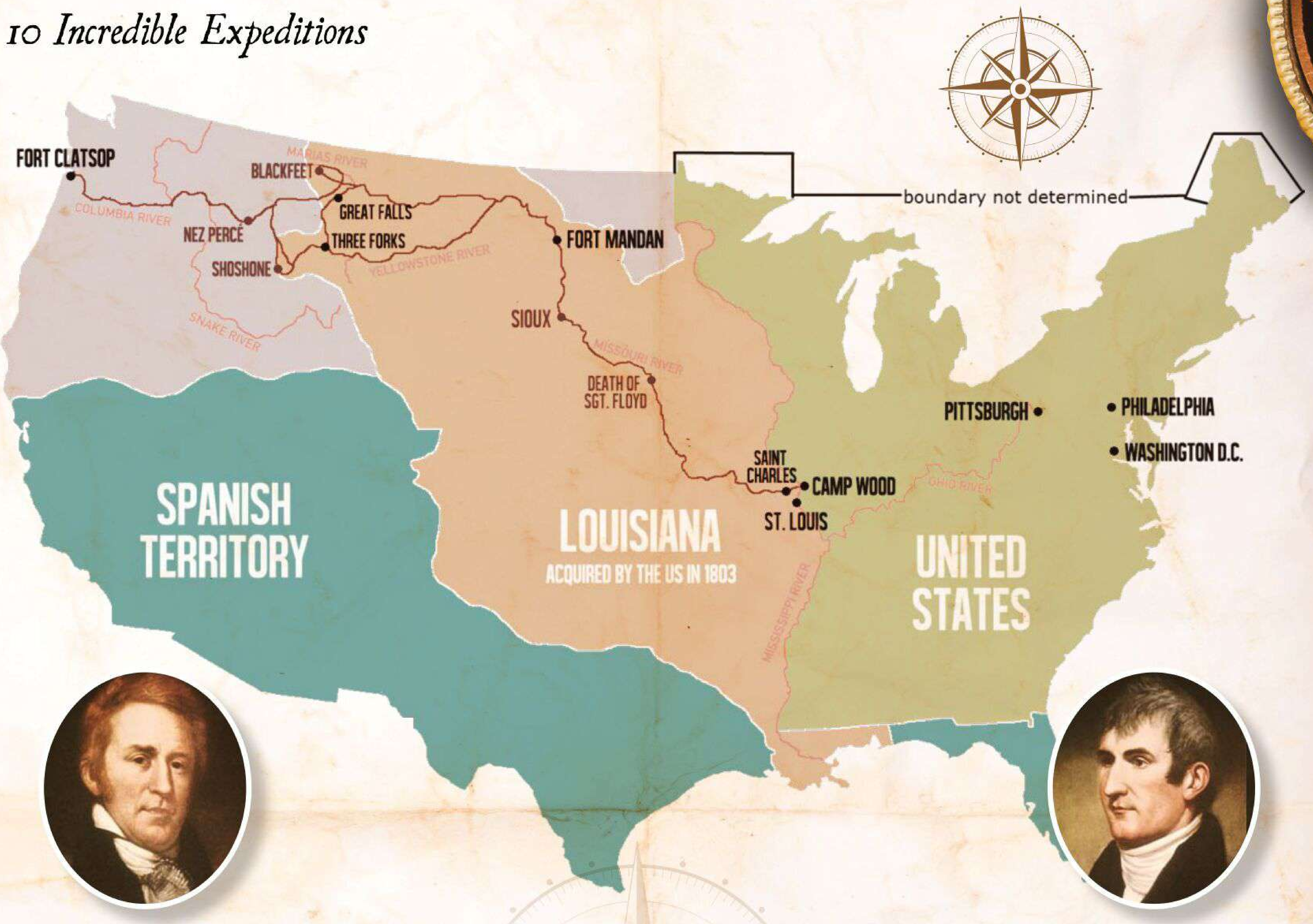
"Dr Livingstone, I presume?" asked journalist Henry Stanley, sent to find Christian missionary and explorer David Livingstone. By the time the two met in the autumn of 1871, Livingstone was renowned as an explorer of the interior of the African continent. His periodic expeditions had occurred over 24 years, and this latest venture, undertaken in 1866, had among its objectives locating the source of the great River Nile.

A Scotsman and medical doctor, Livingstone had come to Africa in 1841. His first expedition was undertaken eight years later, and the staunchly anti-slavery missionary crossed the Kalahari Desert, discovered Lake Ngami, and sighted the Zambezi River in 1851. A second expedition was mounted in 1852, and Livingstone spent the next four years crossing the southern expanse of the continent from east to west. He explored the upper Zambezi and came upon a breathtaking waterfall, which he named Victoria Falls in honour of the British monarch, Queen Victoria. In 1856, he reached the mouth of the Zambezi on the Indian Ocean.

Livingstone's exploration provided tremendous information on the interior of Africa, and he was celebrated in Europe. News of his discoveries quickened the pace of European colonisation of Africa in the decades to come. In 1857, Livingstone published the book *Missionary Travels And Researches In South Africa*, and in 1858 he undertook another expedition, lasting five years. In 1865, he published the book *Narrative Of An Expedition To The Zambesi And Its Tributaries.*

The following year, Livingstone launched his final expedition to the interior of Africa with public and private financial support and the title of consul at large for the British government. He landed at Zanzibar on 28 January 1866. Desertion and discontent dogged the expedition, but Livingstone pressed on in his quest to find the elusive source of the Nile, spread the Christian Gospel, and oppose the slave trade. His health failing, Livingstone reached Lake Tanganyika and the furthest westward penetration of Africa's interior by a European, near the Congo River in spring 1871.

Since nothing had been heard from Livingstone for some years and rumours of his death had surfaced, several search parties were sent to look for him. After Stanley succeeded, the two men continued to explore north around Lake Tanganyika and then further east. When Stanley set out for Britain in March 1872, Livingstone chose to stay and continue exploring Africa. He died a year later.


FORT CLATSOP
MARIAS RIVER
BLACKFEET
GREAT FALLS
COLUMBIA RIVER
NEZ PERCÉ
THREE FORKS
SHOSHONE
YELLOWSTONE RIVER
FORT MANDAN
SNAKE RIVER
SIOUX
MISSOURI RIVER
DEATH OF SGT. FLOYD
SAINT CHARLES
CAMP WOOD
ST. LOUIS
OHIO RIVER
MISSISSIPPI RIVER
PITTSBURGH
PHILADELPHIA
WASHINGTON D.C.
boundary not determined
SPANISH TERRITORY
LOUISIANA
ACQUIRED BY THE US IN 1803
UNITED STATES

The Corps of Discovery Expedition by Lewis & Clark

1804-1806

Exploration of Western United States territory

In 1803, the United States purchased the vast Louisiana Territory from Napoleonic France for $15 million. President Thomas Jefferson allocated $2,500 to fund an expedition into the wilderness and asked his personal secretary, Meriwether Lewis, to lead it. Lewis agreed and requested that his friend, William Clark, join him.

On 14 May 1804, the westward adventure, sometimes referred to as the Corps of Discovery Expedition, began. Thirty-three people participated, including Clark's personal slave, York, who earned his freedom after the trek. From St Louis, Missouri, the expedition set out to explore and map the territory, establish good relations and trade with Native Americans, assert US sovereignty against the threat of British and Spanish interference, and locate a water route from the Mississippi River to the Pacific Ocean.

Lewis and Clark travelled 8,000 miles during a three-year trek, braving harsh weather, difficult terrain, starvation, and disease. They crossed the Continental Divide, reaching the Columbia River on 16 October 1805, and the Pacific a month later. Along the way, they established contact with the Lakota Sioux, a powerful Native American tribe of the Great Plains, and other indigenous peoples. They documented the existence of more than 100 animal species and 178 plant types while completing 140 maps of the Louisiana Territory. However, they were unable to locate a continuous waterway from the Mississippi to the Pacific.

The expedition might not have succeeded without the assistance of many Native Americans, particularly the Mandan of present-day North Dakota. Lewis and Clark were also helped by Toussaint Charbonneau, a French-Canadian trader and trapper, and his wife, Sacagawea, a member of the Native American Shoshone tribe. The two acted as interpreters, guides, and liaisons with the native peoples, and Sacagawea has achieved lasting fame.

During the return journey in 1806, Lewis was seriously wounded in a hunting accident after the expedition had split in two groups. His band also skirmished with Blackfoot Indians attempting to steal from them. Lewis and Clark reunited along the Missouri River and successfully returned to St Louis on 23 September 1806. Lewis kept a detailed journal of the expedition and was subsequently named governor of Louisiana.

The famed Corps of Discovery Expedition created great interest in the American West, expanded scientific knowledge, and hastened settlement beyond the Mississippi River as the United States stretched from Atlantic to Pacific.

The Moon landing

1969

Apollo 11 lands and Neil Armstrong walks on the Moon

"I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth," President John F Kennedy told the US Congress on 25 May 1961.

On 20 July 1969, before the end of the decade that Kennedy did not live to see, astronaut Neil Armstrong, commander of the Apollo 11 mission, stepped from the lunar module onto the Moon's surface. He remarked, "That's one small step for man, one giant leap for mankind." Armstrong's historic step occurred at 10.56pm Eastern Daylight Time, and parents across the United States kept their children awake to witness the event on TV.

Armstrong's step was the culmination of an effort undertaken by the National Aeronautics and Space Administration (NASA) in the early 1960s. Kennedy's challenge to beat the Soviet Union to the Moon had been met, and the US space program engendered tremendous national pride after the Soviets had achieved several 'firsts' in space exploration during the late 1950s. Following the Mercury and Gemini programs, the Apollo program overcame setbacks, including the tragic loss of three astronauts during a pre-launch test firing of the Saturn V rocket engine in 1967.

On the morning of 16 July 1969, Apollo 11 lifted off from the Kennedy Space Center at Cape Canaveral, Florida. Aboard were Armstrong, Edwin 'Buzz' Aldrin, and Michael Collins. The spacecraft roared across 240,000 miles in just 76 hours to orbit the Moon, arriving on 19 July. The next day, the lunar module, named Eagle, detached itself from the command module, piloted by Collins, and began its descent.

At 4.18pm, the craft settled to the surface of the Moon in a relatively flat area called the Sea of Tranquillity. Armstrong radioed mission control in Texas; "Houston, Tranquility Base here. The Eagle has landed."

Within hours, Armstrong descended the ladder from the Eagle to the lunar surface. He later said that his memorable statement was actually "That's one small step for a man…." Aldrin followed a few minutes afterwards. The astronauts erected a US flag, took photographs, talked with President Richard Nixon, and left an inspiring plaque that read, "Here men from the planet Earth first set foot on the Moon – July 1969 AD – We came in peace for all mankind."

The crew of Apollo 11 returned safely to Earth on 24 July and five more successful missions to the Moon followed.

The crew of Apollo 11 made history by going where no human had gone before

Neil Armstrong and Buzz Aldrin captured imaginations with their Moon broadcasts

Ancient Navigators

Early exploratory journeys and voyages in the Middle Ages

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Norse raiders pillaged and plundered the known world in search of treasure and territory

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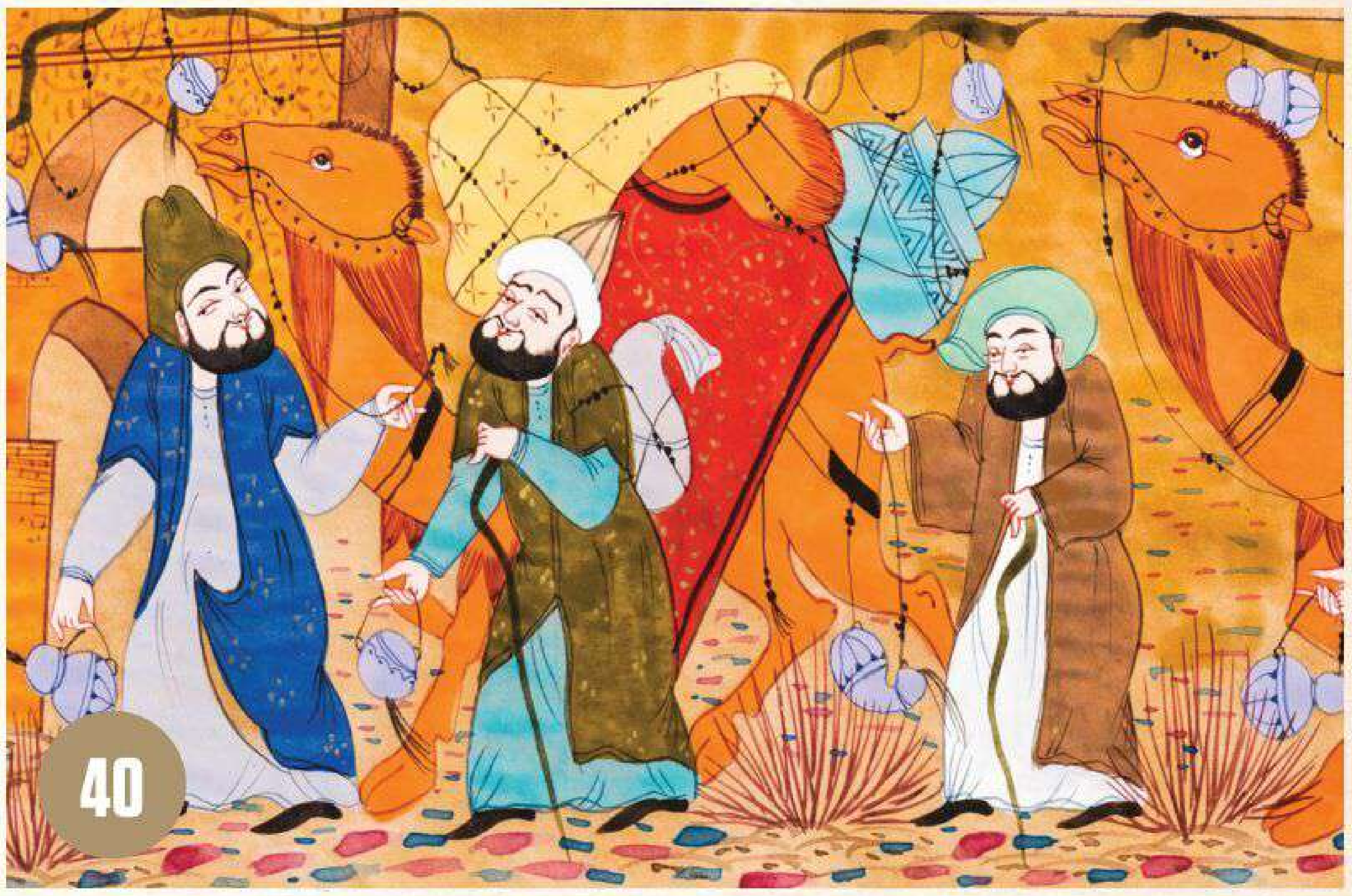
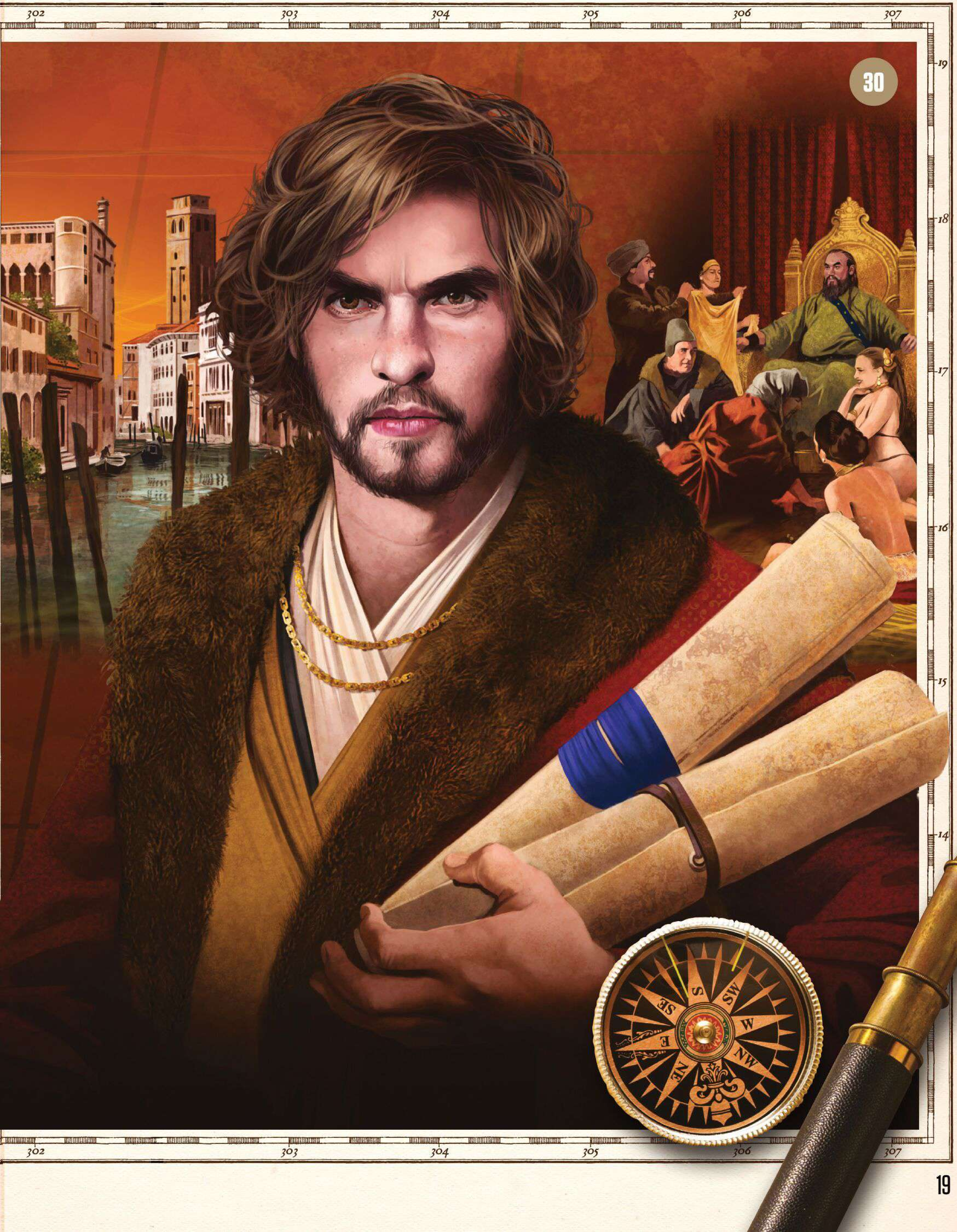
For 30 years Ibn Battuta travelled the Islamic World and left behind his captivating story

46 Voyages of the Chinese Treasure Fleet
Explorer Zheng He attempted expand Chinese influence through trade

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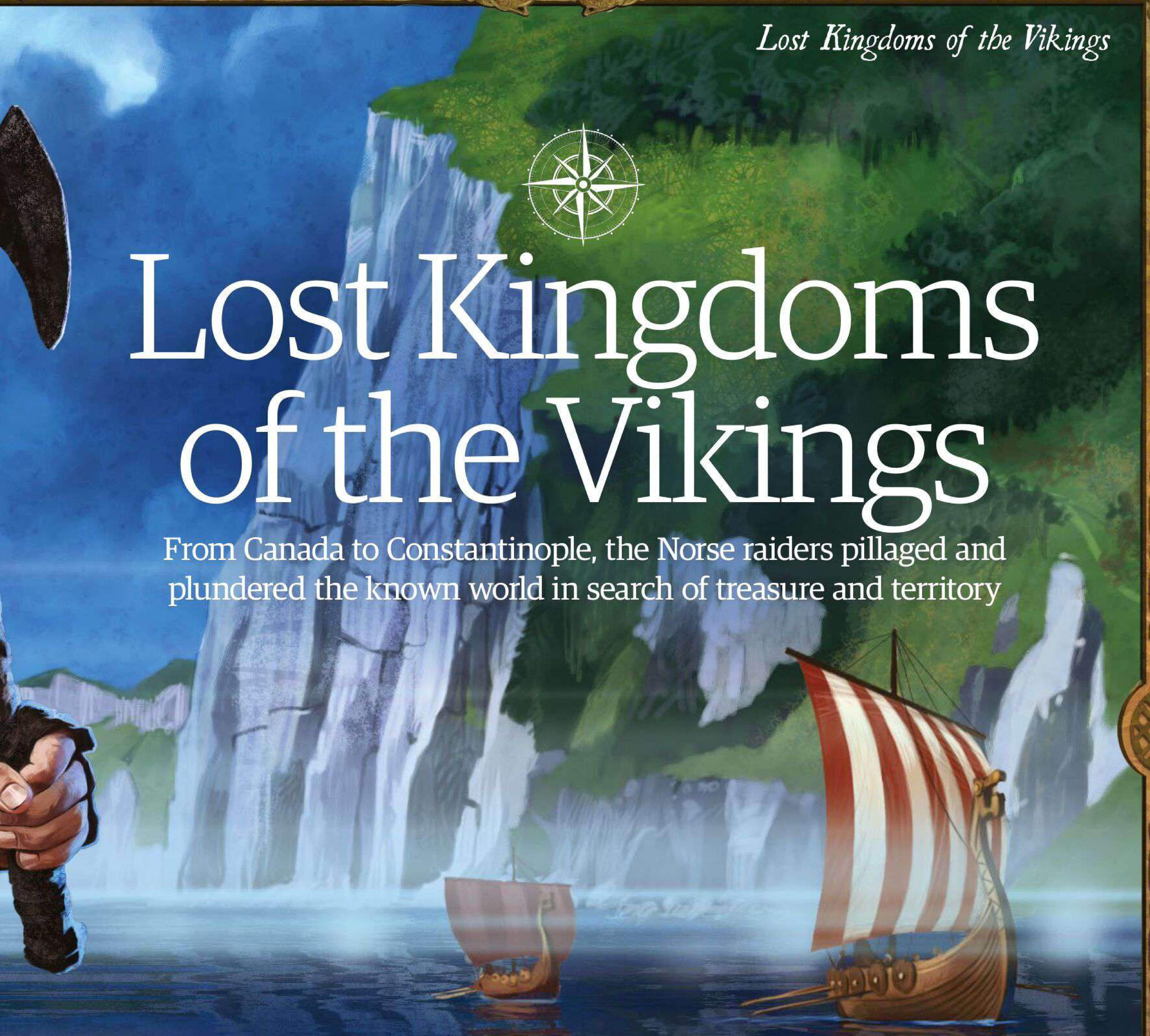


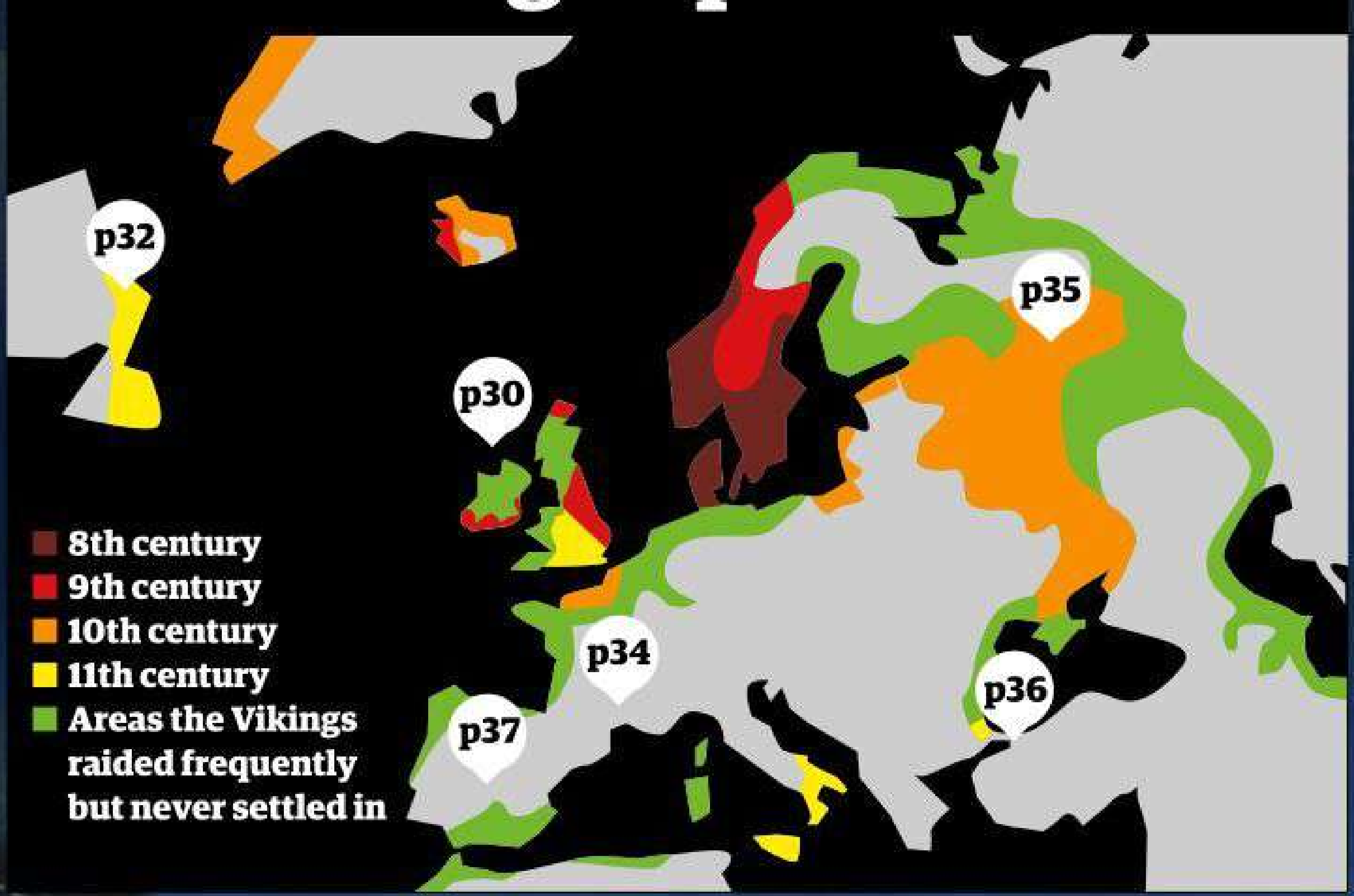
Lost Kingdoms of the Vikings

From Canada to Constantinople, the Norse raiders pillaged and plundered the known world in search of treasure and territory

Often portrayed as bloodthirsty raiders, the Vikings were a civilisation that travelled to more of the Early Medieval world than anyone else. Originating from Scandinavia, they branched out into mainland Europe to find food, land and riches, establishing kingdoms across the known world. For hundreds of years a fleet of longships on the horizon struck fear into the hearts of European peoples like the Franks and Saxons. The men from the north were traders as well as raiders, though, and commerce helped fund their lengthy expeditions. Bringing with them fur, wool and whalebone, they traded their goods for silver, silk and spices, which they then sold on. To trade or raid? It all hinged on profit.

The Vikings are perhaps most famous for their attacks on the British Isles, the forced establishment of the Danelaw and battles against Alfred the Great. However, they sailed their longships all across Europe and ruled over many diverse lands. They even made forays into parts of Asia, America and Africa. From Newfoundland in the west to Kiev in the east, the Norsemen braved treacherous oceans and faced deadly adversaries. They may have seemed like savages, but it's the Norsemen we have to thank for the establishment and development of many of the European kingdoms that flourished after their decline.

Viking expansion



- 🟫 8th century
- 🟥 9th century
- 🟧 10th century
- 🟨 11th century
- 🟩 Areas the Vikings raided frequently but never settled in

Ireland

For more than 200 years the Vikings exerted influence over vast swathes of the Emerald Isle

Norwegian Norsemen first appeared in Ireland at the end of the 8th century with a hit-and-run attack on a monastery on either Rathlin or Lambay Island. These sporadic coastal attacks continued for 30 years, and despite later spreading to the mainland, actually had no great effect on the Irish settlements that would rebuild during the lulls in fighting. At this stage, the marauders were content with staging assaults that lasted no longer than a few days before returning to Scandinavia to sell their spoils. At the start of the next century, however, the Vikings grew in confidence and the pillaging intensified. Ship enclosures (known as longphorts) were established in Dublin, and these fixed positions allowed the raiders to ravage the countryside at will. It wasn't long until Irish kings had had enough. The king of Tara, Máel Seachnaill, took the fight back to the Vikings, and near Skreen in County Meath, killed no less than 700 Nordic raiders.

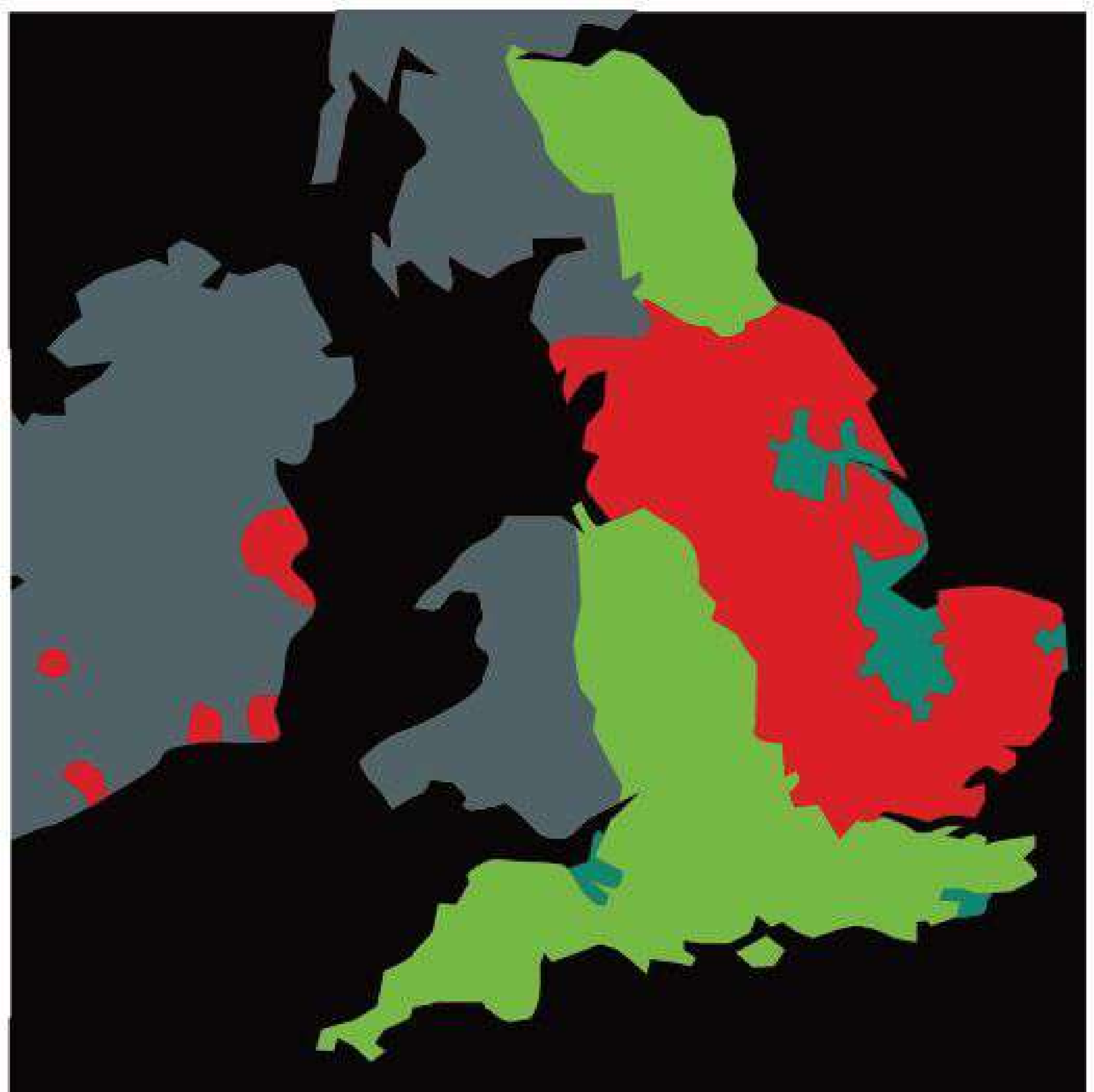
The increase in assaults had a profound effect on the Celtic-Irish society for more than two centuries. Norse-Irish alliances became common, but by the start of the 10th century, Vikings from Denmark were added to the mix. To differentiate, Vikings from Norway were known as the 'Lochlainn' and the Danish Norsemen as the 'Danair'. The Viking success on the British Isles only increased the number of attacks, and in the years leading up to 1000, they tactically used their longships to travel up rivers and attack further inland. The Norwegians dominated initially, financed by all the monasteries they plundered, but the disorganised nature of their attacks meant the Danes' power base grew steadily.

On the Irish side, one man rose above the others, the king of Munster, Brian Boru. With his support base in the southern kingdom, Brian assembled a unified confederate army, which imposed itself as the major force in the region. The army destroyed Dublin's fortress, allied with many of the Viking leaders and was even powerful enough to expel several Norse clans from Ireland entirely. Brian claimed kingship in league with the Dublin Norse, and no one dared challenge him. His supremacy lasted until 1012, when a series of intense Viking attacks culminated in the critical Battle of Clontarf in 1014.

Taking place on 23 April, Clontarf was a battle between the majority of the Irish kingdoms led by Brian against Vikings supported by Mael Morda, the king of Leinster, who had switched allegiances after a dispute. Brian had approximately 7,000 troops at his disposal, and they marched to Dublin to engage 4,000 Leinster men and 3,000 Norsemen who had landed on the shoreline at sunrise. As the armies brawled, Morda's men scored an early advantage as his vicious Viking centre proved devastatingly effective. The pendulum swung in the other direction, however, when the Viking champions Brodir and Sigurd were defeated. As afternoon came, Brian's men managed to cut off the Viking access to their longships. This was a critical blow to Morda's forces, who began to flee towards the one bridge over the nearby River Liffey to safety. As they tried to escape, the returning Máel Seachnaill and his men emerged and cut off access to the bridge. The Vikings and the Leinster men were now trapped and subsequently routed.

The battle was the bloodiest single conflict in ancient Irish history. Brian lay dead in the mud with 4,000 of his own men and, crucially, 6,000 Leinster men and Vikings lay slaughtered alongside them. The battle resulted in the end of a period of great turmoil in Ireland and initiated a time of relative peace in which the Irish and the remaining Vikings lived together. The Norsemen who stayed in Ireland were absorbed into Irish culture and started to intermarry. The Danish kingdom of Dublin had stood for more than 200 years prior to Clontarf, but just 52 years later, Harald Hardrada would lose at Stamford Bridge and the great Viking age of the British Isles would be over.

Historic Viking settlements can be easily identified by '-by' and '-thorpe' suffixes, which in Old Norse meant homestead and farm. Therefore, cities and towns such as Derby Grimsby, Whitby and Scunthorpe were once Nordic settlements

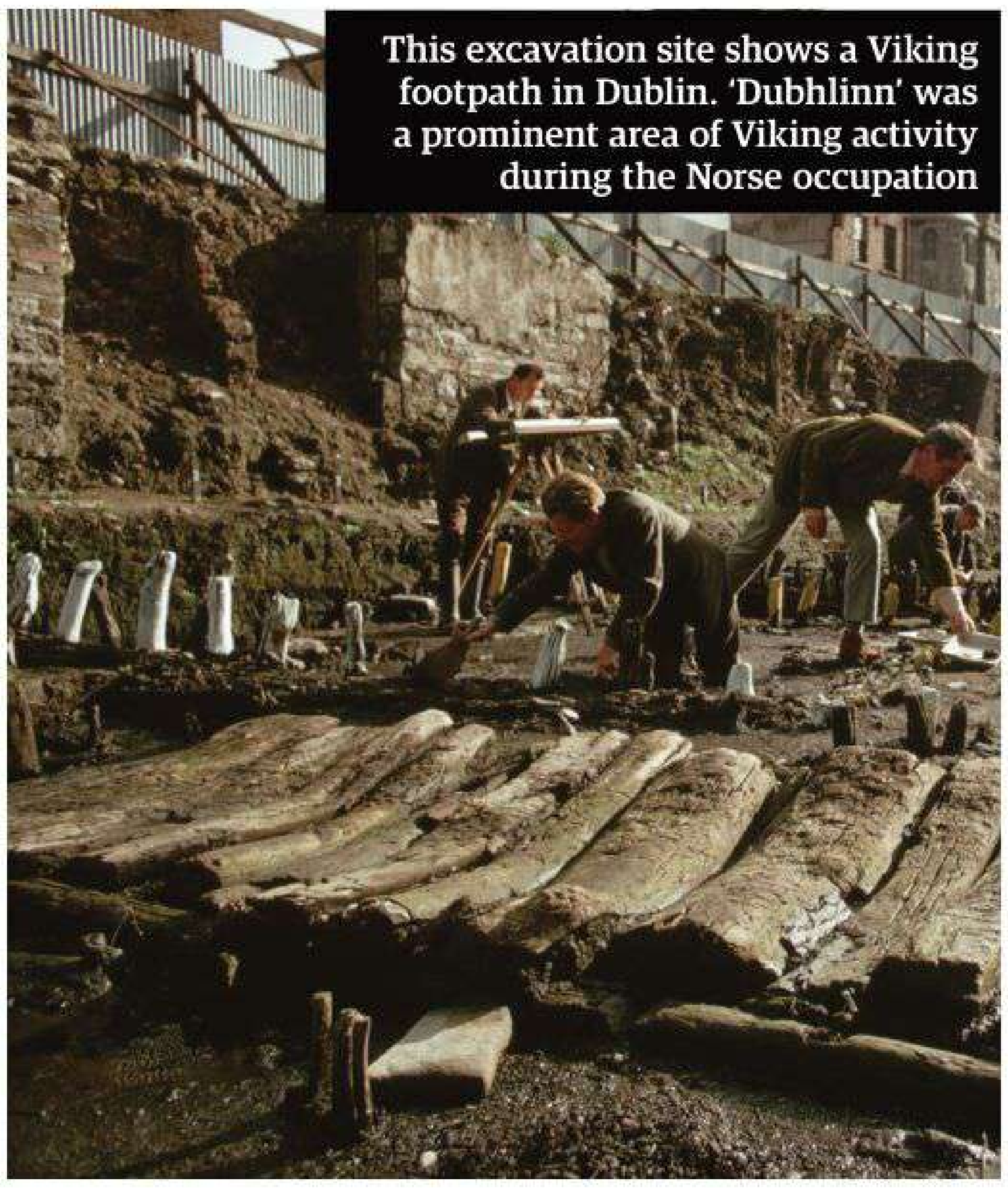


🟩 **English territory** 🟥 **Danish or Norse territory**
■ **Celtic lands** 🟦 **Swamp**

Vikings in the British Isles

The areas of Viking conquest that became known as the Danelaw

The first significant Viking attack on the British Isles was in 793, when the Vikings carried out a brutal raid on the island monastery of Lindisfarne. The almost constant assaults on Britain's coastline over the next few centuries were too much for the Anglo-Saxons, and Celts, who surrendered a vast swathe of land to the Norse raiders.



This excavation site shows a Viking footpath in Dublin. 'Dubhlinn' was a prominent area of Viking activity during the Norse occupation

The theories behind the Viking expansion

Exhausted farmland

Scandinavia has a variety of landscapes but none were ideal for farming. Norway was too mountainous, Sweden had extensive forests while Denmark could be too sandy.

Desire for treasure

Searching far-off lands for plunder is something the Vikings became associated with. Raids were carried out overseas and a settlement would be built to cement their claim to the loot.

Overcrowding

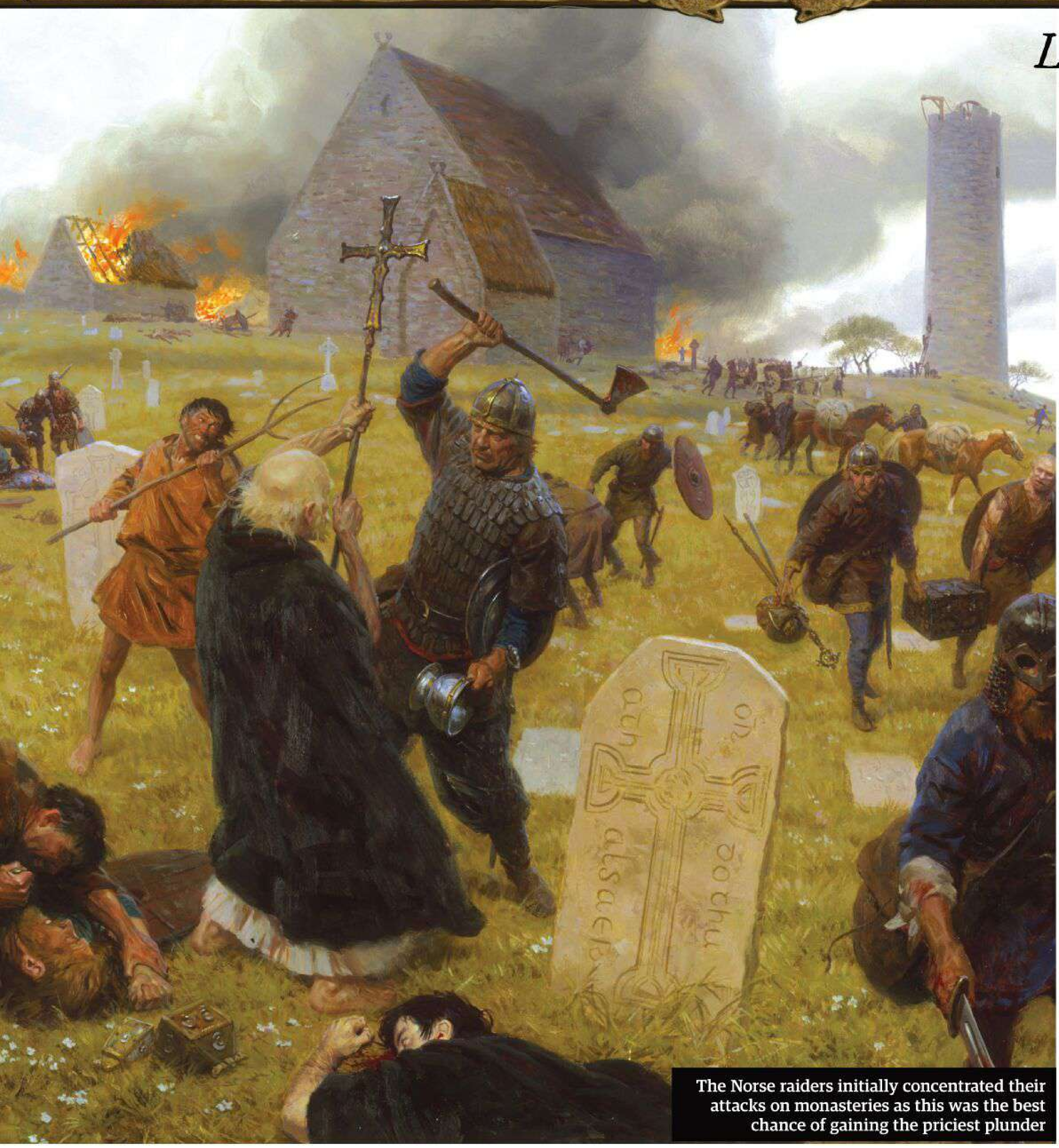
As the Viking population swelled, many sought to move elsewhere. The eldest son inherited family lands, so younger brothers would venture in search of territory to call their own.

Wanderlust

A sense of adventure was a common Viking trait. Even when the treasure dried up, the Norsemen were keen to seek out new lands in far-off places like America and Constantinople.

New trade routes

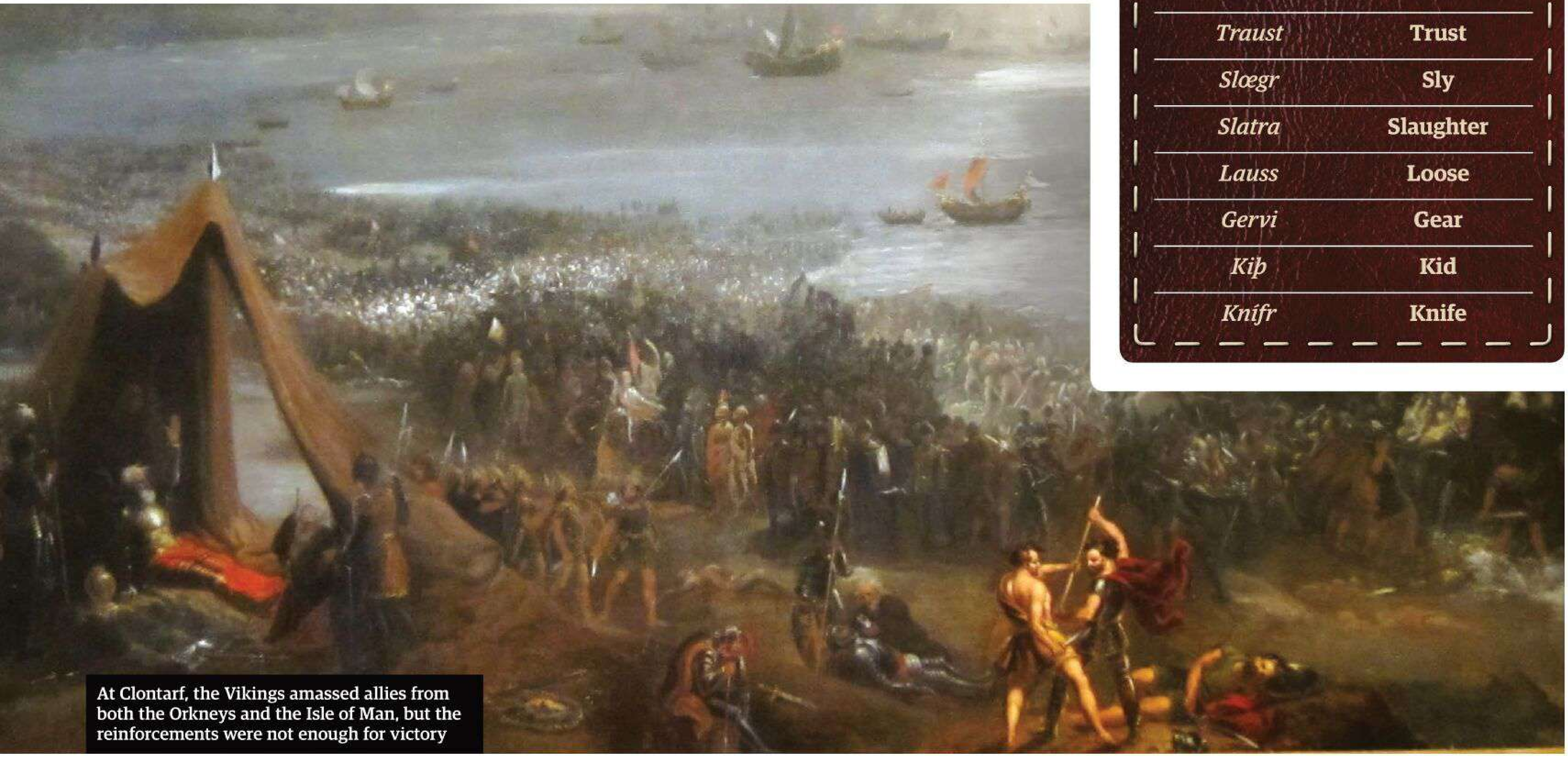
The popularity of Christianity meant that many of the nearby Christian kingdoms refused to trade. As a result, the pagan Vikings would either invade the lands or look elsewhere for trade.



The Norse raiders initially concentrated their attacks on monasteries as this was the best chance of gaining the priciest plunder

Norse words that invaded the English language

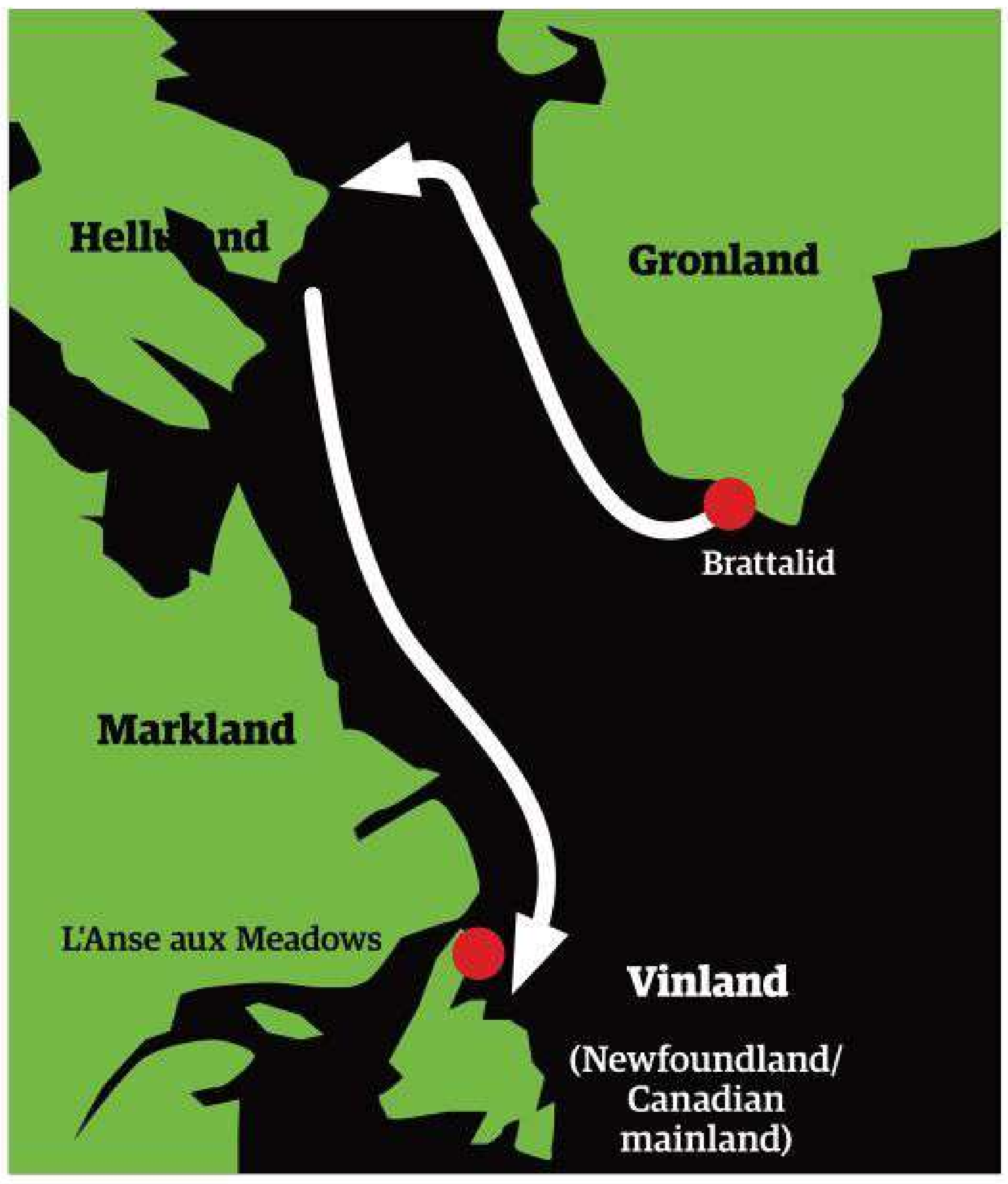
Old Norse	Modern English
Sala	Sale
Klubba	Club
Beit	Snack
Rannsaka	Ransack
Fiall	Hill
Berserkr	Berserk
Hloppa	Flea
Burðr	Birth
Kalla	Call
Kasta	Cast
Krafla	Crawl
Hús bóndi	Husband
Leggr	Leg
Uggr	Ugly
Rotinn	Rotten
Renna	Run
Traust	Trust
Slœgr	Sly
Slatra	Slaughter
Lauss	Loose
Gervi	Gear
Kiþ	Kid
Knífr	Knife



At Clontarf, the Vikings amassed allies from both the Orkneys and the Isle of Man, but the reinforcements were not enough for victory

North America

With parts of Northern Europe ransacked, the Vikings turned their attention to the other side of the Atlantic

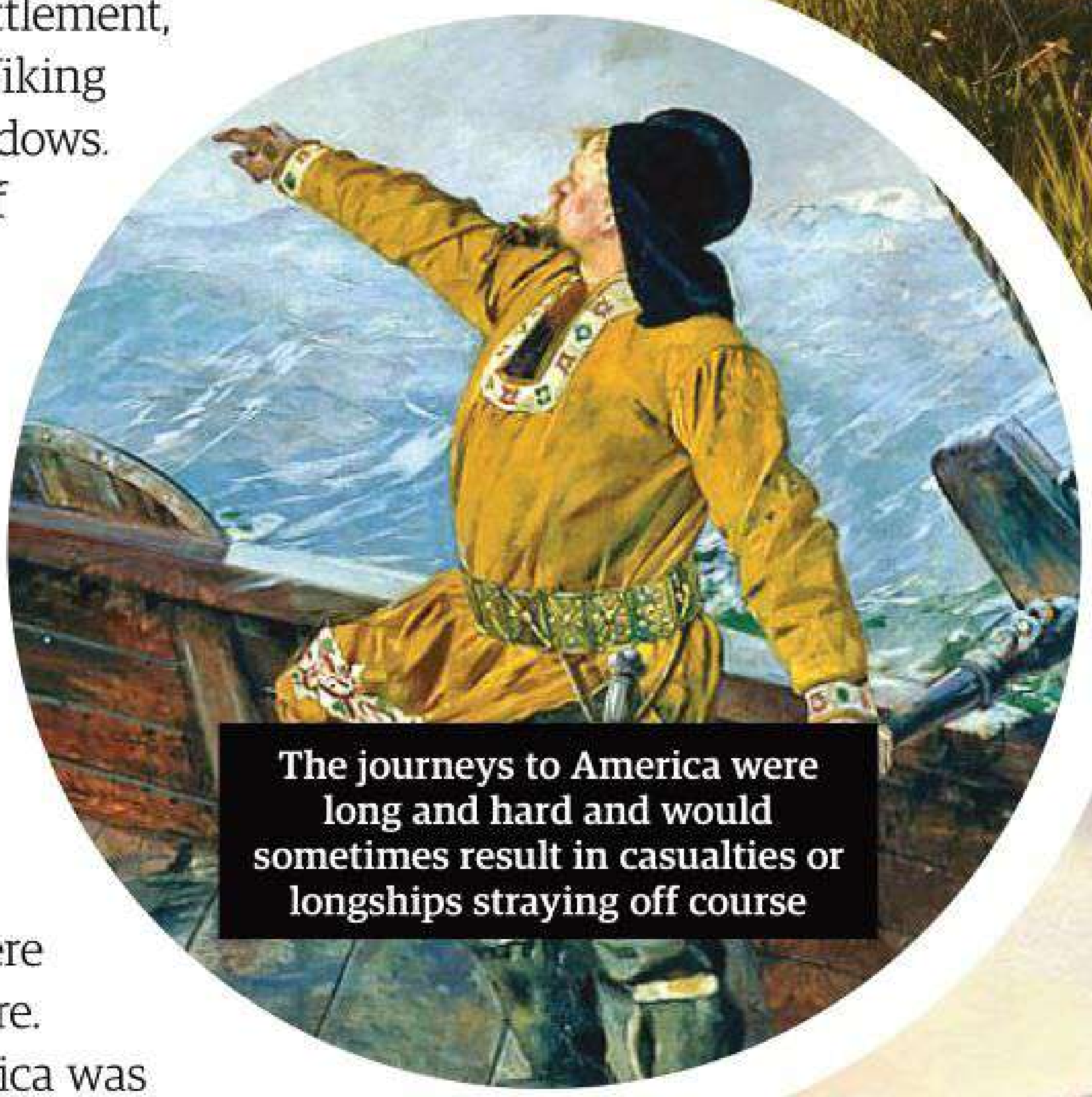


The true extent of the Viking presence on North America is hotly debated, but it will always be one of the greatest achievements of maritime exploration. After the Norse Vikings populated Iceland in about 870, Greenland was next to follow, with its conquest instigated in the 980s by the notorious Erik the Red. The rough seas of the Atlantic were much tougher than the Vikings had previously experienced on the North Sea. To combat the difficult conditions, the Norse mariners used a type of ship known as a knarr. Larger than the standard longship, it could carry much more cargo and would stand up to whatever the Atlantic had to throw at it. This allowed for longer and more fruitful journeys. By 1150, 72,000 Norsemen were living in Iceland while 5,000 resided in Greenland.

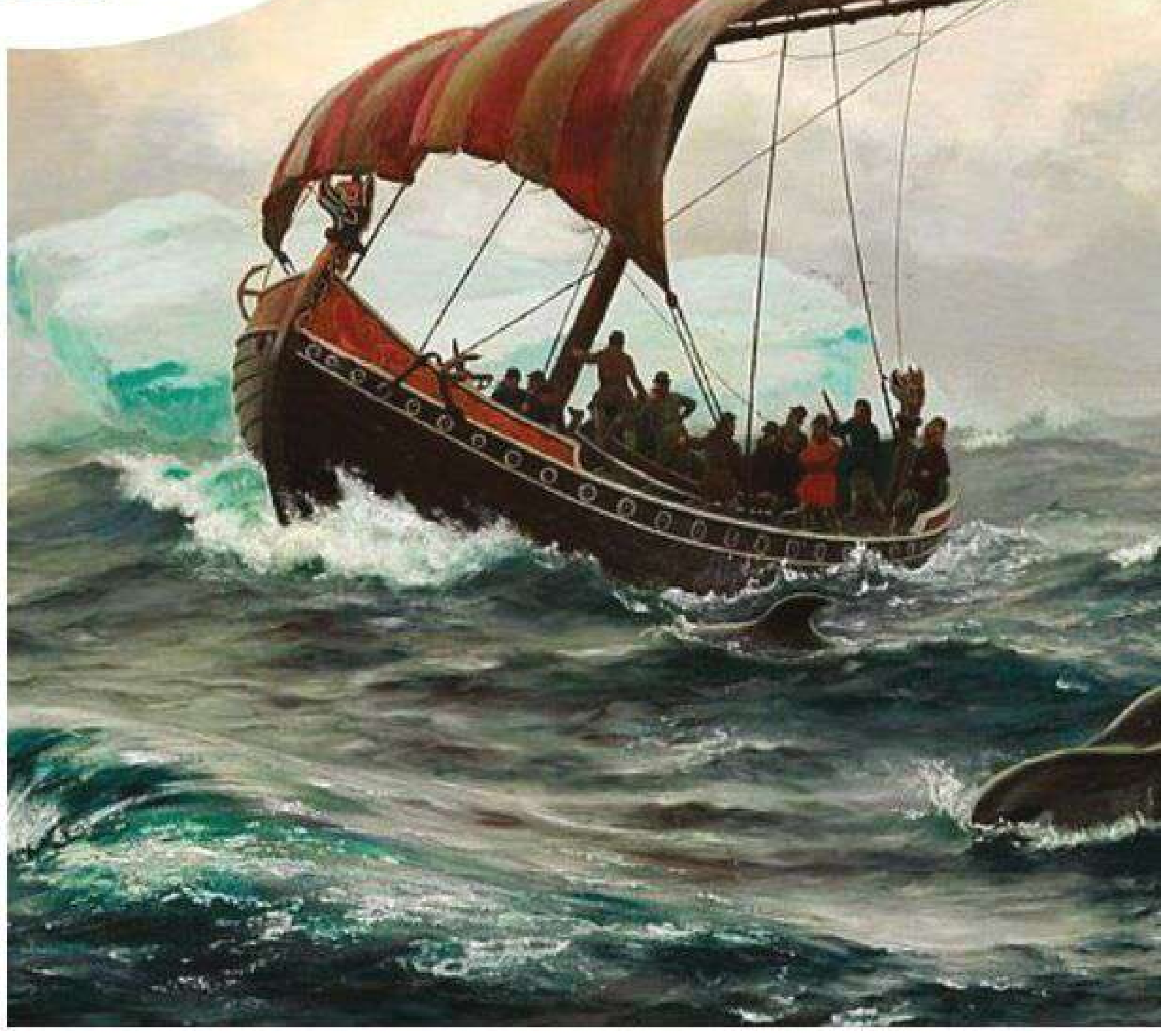
The adventuring continued, and the first Viking sightings of North America came in about 985, when Icelander Bjarni Herjólfsson spotted uncharted land after being blown off course on his way to Greenland. The stories of a new land encouraged others to seek it out. In about 1000, Leif Eriksson, the son of Erik the Red, was the first to set foot on this unexplored territory. Eriksson and his 35-man crew may have been sent by Norwegian king Olaf I to spread Christianity (Olaf was one of the first Vikings to preach the ideas of the religion) and discovered three places around the Gulf of Saint Lawrence. Eriksson named them Helluland (land of flat rocks), Markland (land of forest and timber) and Vinland (land of warmth and vines). We know them today as Baffin Island, the Labrador coast and Newfoundland.

After this initial excursion, the westward journeys only continued. The most extensive voyage was undertaken by Thorfinn Karlesfni, who intended to settle in this new found land for good, taking more than 100 men and women as well as tools, weapons and farm animals on his expedition. His wife gave birth to the first child from the old world to be born in the new. As more Vikings made the journey, it was inevitable they would make contact with the native population. Norse men and women called the natives Skrælingjar and became trading partners, benefiting from the fur given to them by the locals. The Skrælingjar were a pre-Iron Age civilisation and most likely the ancestors of the modern Inuit. They were given their first taste of iron weaponry and tools by these visitors from across the sea.

The settlements built by the Vikings in North America consisted of sod walls with peaked timber roofs. The most prominent settlement, and what is seen as proof of Viking occupation, is L'Anse aux Meadows. Located on the northern tip of Vinland, the area is believed to have been home to about 75 people and would have probably acted as a base camp for repairing ships. After approximately two or three years of attempted colonisation, the Skrælingjar began to see the Vikings as a threat and unrest broke out. As a result of the violence, trade visits were no longer a worthwhile venture. Viking activity in North America was dramatically reduced, as the settlements in Greenland could no longer support further trade missions that lost both men and valuable resources. Greenland wasn't a fully functioning Norse colony at the time, and these less than favourable economic conditions made journeys to North America more and more difficult.


The journeys to America were long and hard and would sometimes result in casualties or longships straying off course

The Viking failure to colonise the Americas on a long-term basis was due to both natural hazards and native resistance, but also confirmed the limitations of nautical conquest in the early Middle Ages. The distance from Greenland to Vinland is about 3,500 kilometres, which was a tough journey for any Medieval vessel, and the small population didn't have the manpower to overpower the natives. They may have discovered North America 500 years before Columbus, but the Vikings were unable to sustain a stable colony in the New World.



The Vikings made it to Greenland in 982 and established both eastern and western settlements with about 300 farmsteads

Norse technology was not significantly more advanced than that of the natives meaning the Vikings found it difficult to assert their authority

What became of Vinland?

Expert bio: Dr Alex Sanmark is reader in Medieval Archaeology at the Centre for Nordic Studies, University of the Highlands and Islands. She specialises in various aspects of the Viking Age, from religion to law and gender, both in Scandinavia and the Norse settlements in the north Atlantic.

How important is L'Anse aux Meadows to our understanding of Viking settlements in the New World?
It is hugely important because it is the only Viking settlement in the New World. There are other types of archaeological evidence though. Two Icelandic sagas, for instance, tell us about the Vikings sailing to Vinland from Greenland and Iceland. This has, of course, spurred people's imagination, and many have been looking for evidence of Viking presence a lot further south, especially in the US. Others have faked the evidence by producing their own runic inscriptions. The Viking settlement of the New World is an important political issue for some who are keen to show that 'Europeans' were there from early on. The sagas are highly problematic as sources as they are very late, dating from the 13th century onwards, and they are also literature, meaning that they don't necessarily tell us exactly what happened. We can't rely on them for evidence, so this settlement is of great importance.

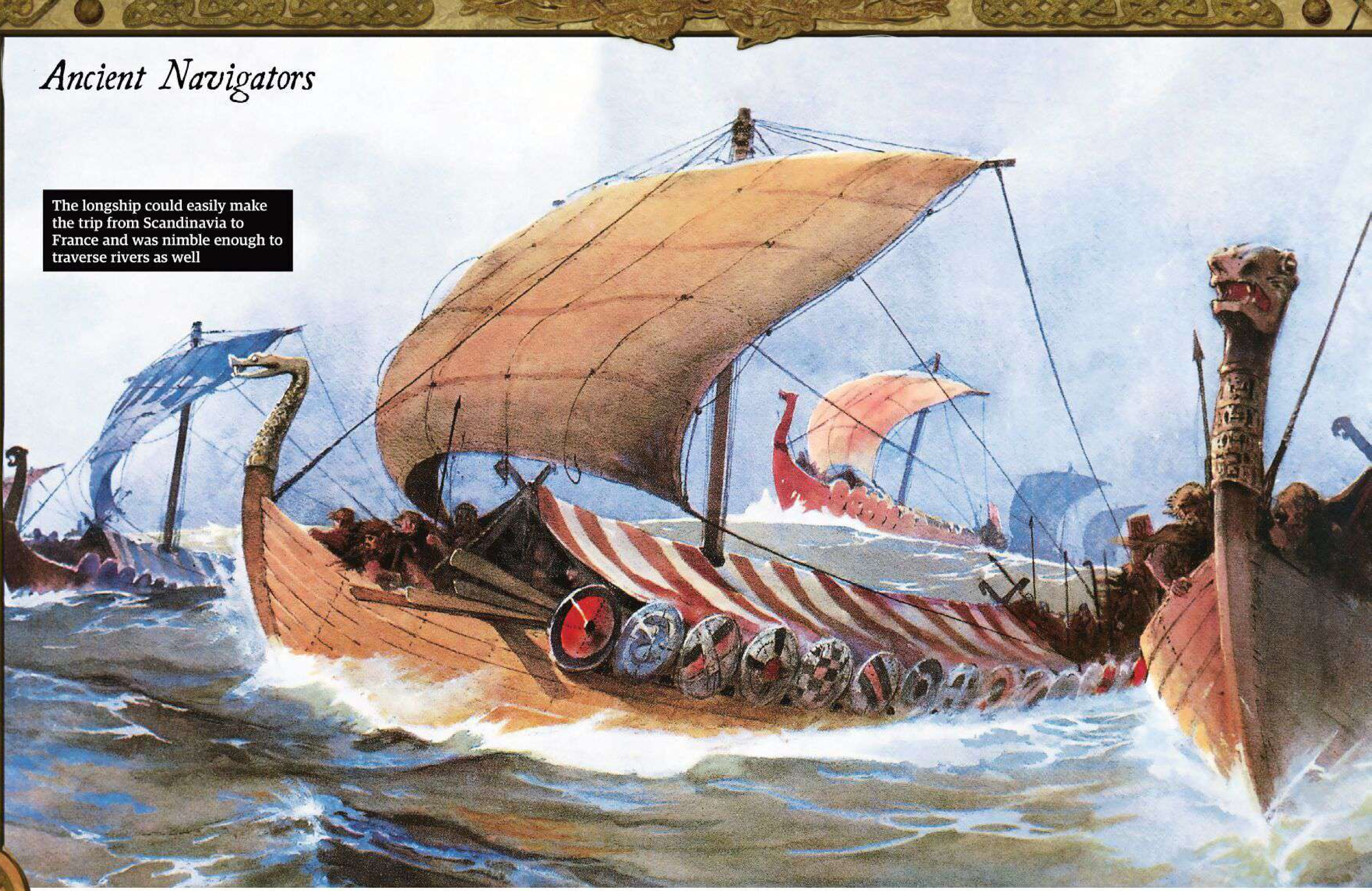
Are there any similar Viking settlements to L'Anse aux Meadows in the Americas?
No, but a possible Viking camp has been identified on Baffin Island in recent years. There is also an increasing amount of archaeological evidence from Canada that shows that the Vikings were there and traded with the natives. It is possible that established trading networks were in place and the Vikings may well have travelled a lot further inland than previously thought. Viking presence is above all traced through artefacts that the native people did not have, such as finds of metal, strike-a-lights and woollen cloth. These finds are important as they point to friendly interactions, which is not always the image provided by the written sources.

Why did the Vikings survive hundreds of years in Greenland but could not establish themselves in Vinland, with its richer resources and better climate?
The settlement at L'Anse aux Meadows was probably never intended to be permanent, but rather a base for resources, such as wood, which they could not get in Greenland. The Vikings seem to have stayed there for short periods of time as the number of Norse in Greenland was never very large, and setting up a new colony would have required a substantial group of people to be successful. Also, L'Anse aux Meadows was not a very useful area for resources that were unavailable in Greenland, for these the Vikings had to travel quite far inland. The journey between Greenland and Canada was long and could take up to a month, which of course made regular journeys between the two areas difficult. It may be, although there is no evidence to prove this, that the relationship with the natives was so difficult that the settlement was abandoned.

> "The settlement at L'Anse aux Meadows was probably never intended to be permanent, but rather a base for resources"

What were relations with the Native Americans like?
We don't know very much about this. The sagas tell us both about trading with the native population and about fights between them. On the other hand, there is increasing evidence of interaction between the two groups and it may be that the whole situation was a lot more positive than the image provided by the sagas. The sagas are literature after all, and it may have been more interesting to describe fighting than trading. In view of recent archaeological finds, I'm sure more evidence will be appearing in the future.

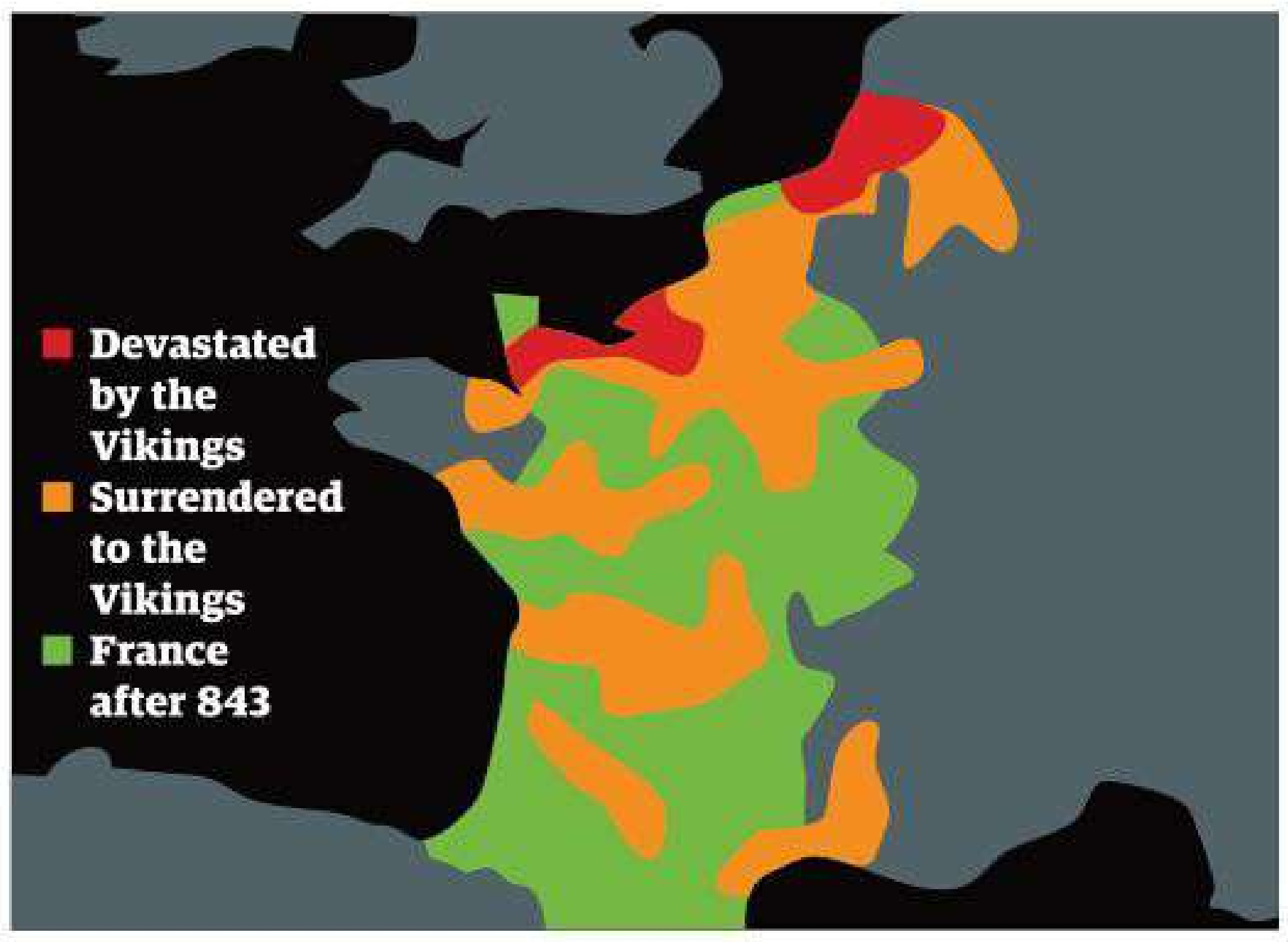
How could a longship or a knarr make it all the way across the Atlantic?
It may seem strange to us that people set out across the North Atlantic in open ships, but we need to see this in its context. It was of course a very long and dangerous journey, and the sagas contain stories about ships being lost on the way. People in the Viking age were, however, very used to travelling in this way and they didn't start by crossing the Atlantic. People in Scandinavia were using ships with sails from the early Iron Age and developed their ships and sailing skills over several hundred years. They were extremely talented seamen and knew when and how to sail, following currents, fish and seabirds.



The longship could easily make the trip from Scandinavia to France and was nimble enough to traverse rivers as well

France

Across the Channel, Vikings threatened the Franks in Normandy, Brittany and Aquitaine



By the end of the 9th century, Vikings from Denmark had increased the amount of coastal assaults on Western Europe and would proceed to populate significant amounts of territory in Normandy, Brittany and Aquitaine. Their leader, Reginherus or Ragnar, thought by some to be the legendary figure Ragnar Lodbrok described in Old Norse poetry, had the confidence and the audacity to siege Paris in 845.

Ragnar led an army of 120 longships and 5,000 warriors – fierce men who had already scorched the earth all over Europe. After plundering Rouen, the siege of Paris began on 28 March. Although the attackers were stopped in their tracks by a plague that spread through the camp, they still managed to take the city, and were only stopped from burning it to the ground by a last-ditch Frankish ransom of 7,000 pounds of silver.

Despite being primarily Danish territory, a Norwegian leader emerged by the name of Hrölfr, or, as he is more commonly known, Rollo. Already a veteran of conflicts on the British Isles, his military forces besieged the city of Chartres, forcing the king of the Franks, Charles III, to sign the Treaty of Saint Clair-sur-Epte in 911, granting Rollo feudal rights in the area around Rouen.

Viking land now stretched from Normandy in the north to Aquitaine in the south, and remained under Viking control for about two centuries. Even though they had foreign invaders in their lands, this was actually of benefit to the Franks as it meant the Norsemen would effectively provide them with a buffer zone against coastal invasions from other enemies of the realm.

It was not long until Christianity and Frankish customs started to take over from Nordic culture. Rollo himself was baptised and the Normans that invaded England in 1066 were descendants of the Normandy Vikings. The Medieval French word for a Scandinavian is 'Normand', a term that was then given to the area (Normandy) and the people that inhabited it (Normans). Harald Hardrada may have been defeated at Stamford Bridge, but William the Conqueror's forces that were victorious at Hastings were more Norse than many think.

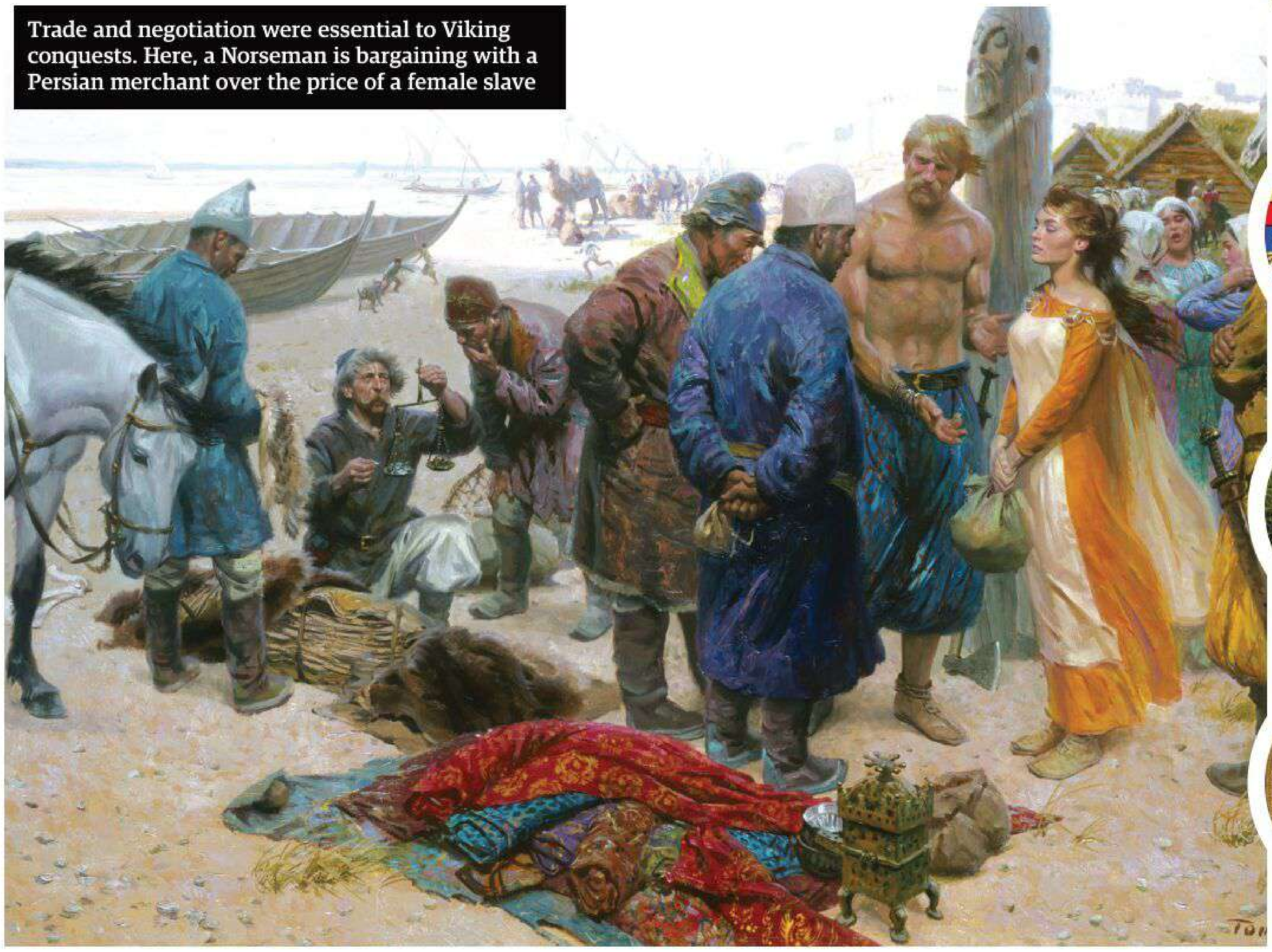
Russia and Eastern Europe

Using the river systems of the Baltic to their advantage, Vikings travelled east for further trade and conquest

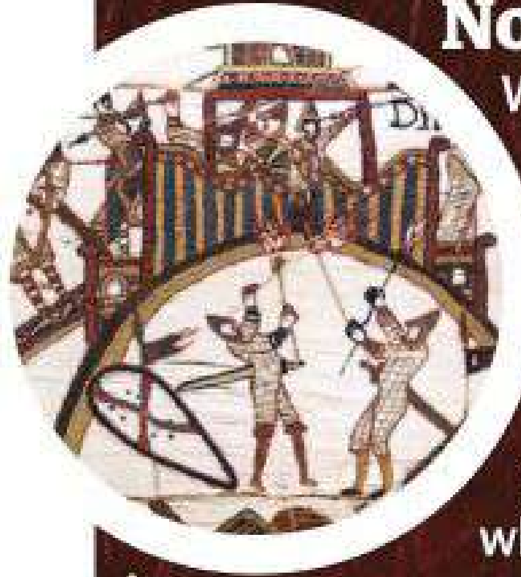
One of the greatest Viking achievements is perhaps their foray deep into Eastern Europe. In the 9th century, the Slavic tribes in Russia and Eastern Europe were fast becoming exhausted by constant inter-tribal wars that were stretching their resources and affecting their commerce. Capitalising on the broken alliances, the Viking ships arrived from the Gulf of Finland in huge numbers. Using large rivers such as the Volga, Neva and Volkhov as waterways, the men from the north vastly expanded their territory.

The town of Novgorod on the banks of Lake Ilmen became one of the main strongholds for the Nordic invaders, who were known as the 'Rus'. The East European plain provided the Vikings with forest and grassland that was ideal for hunting, fishing and farming. The plentiful food supply helped trade routes expand further northwards towards Lake Ladoga and southwards down the River Dnieper. The Rus people traded with local Slavic tribes and travelled into modern-day Russia, helping give the nation its name in the process. The three Swedish kings who came from oversees were Rurik, Sineus and Truvor, who settled in Novgorod, Beloozerg and Izborsk. Rurik's son, Oleg of Novgorod, travelled 600 miles south to take control of Kiev in 882 and went on to pillage lands even further southwards, knocking on the door of the Byzantine Empire in the process.

Like many of the areas that the Vikings inhabited, their influence steadily declined and was replaced by local customs. This happened once again in Eastern Europe as the Russian identity began to become distinct from Norse. One of the kings of Kiev, Vladimir, took the decision to make Greek Orthodox the area's religion in 988, decreasing the impact and relevance of Viking paganism even further. The culture change of the Norse people to more Slavic customs resulted in the growth of a Russian dynasty that rivalled the Carolingian Empire in Western Europe. The founders of the Russian tsardom were descendants of the Rurik Dynasty, a Viking dynasty that became one of Europe's oldest royal houses.


Trade and negotiation were essential to Viking conquests. Here, a Norseman is bargaining with a Persian merchant over the price of a female slave

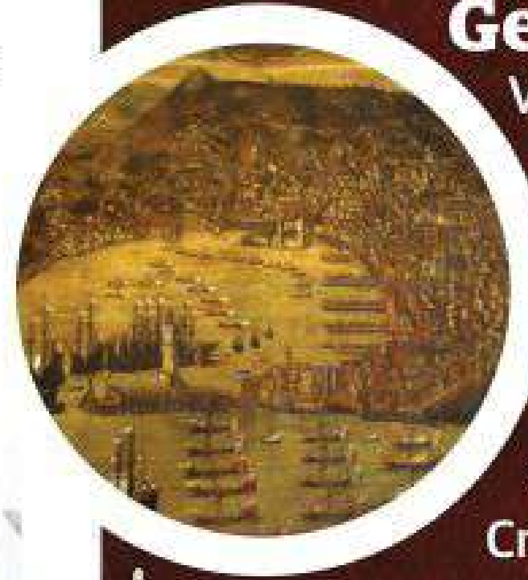
Seven other travelling civilisations



Normans
Well known for their lands in France and England, the Normans were descendants of the Vikings. A realm was established in Sicily and southern Italy in the 10th century and the Norman people also established states in North Africa and even as far east in what is now Lebanon.

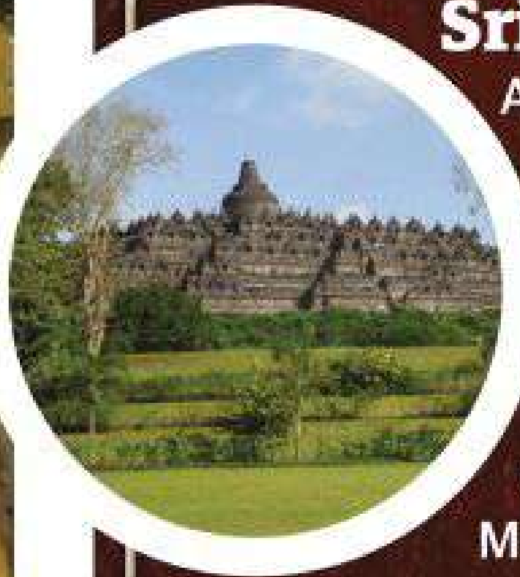
Phoenicians
To the Mediterranean what the Vikings were to the north Atlantic, the Phoenicians were one of the finest trading civilisations of the ancient world. The most powerful city-states were Sidon and Tyre, which became almost too tough for Alexander the Great to conquer.

Venetian Republic
One of the finest nautical trading powers of all time, Venice was the greatest seaport in Late Medieval Europe. The Venetians were excellent shipbuilders thanks to the marshy lagoon in which they lived. The Republic controlled states such as Istria and Dalmatia until its decline and fall in the Napoleonic era.



Genoese Republic
Venice's rival in chief, Genoa benefited from a natural harbour that led to the Ligurian Sea. Its booming maritime economy allowed it to be an independent republic for 800 years. Genoa's trade helped the West in the Crusades and had links as far away as Crimea before losing ground to Venice.

Kalmar Union
In many ways the successor to the Vikings in Scandinavia, the people of the Kalmar Union were great travellers. The kingdoms of Denmark, Norway and Sweden were incorporated under one crown with Copenhagen as the capital. The Union also incorporated Iceland and Greenland.

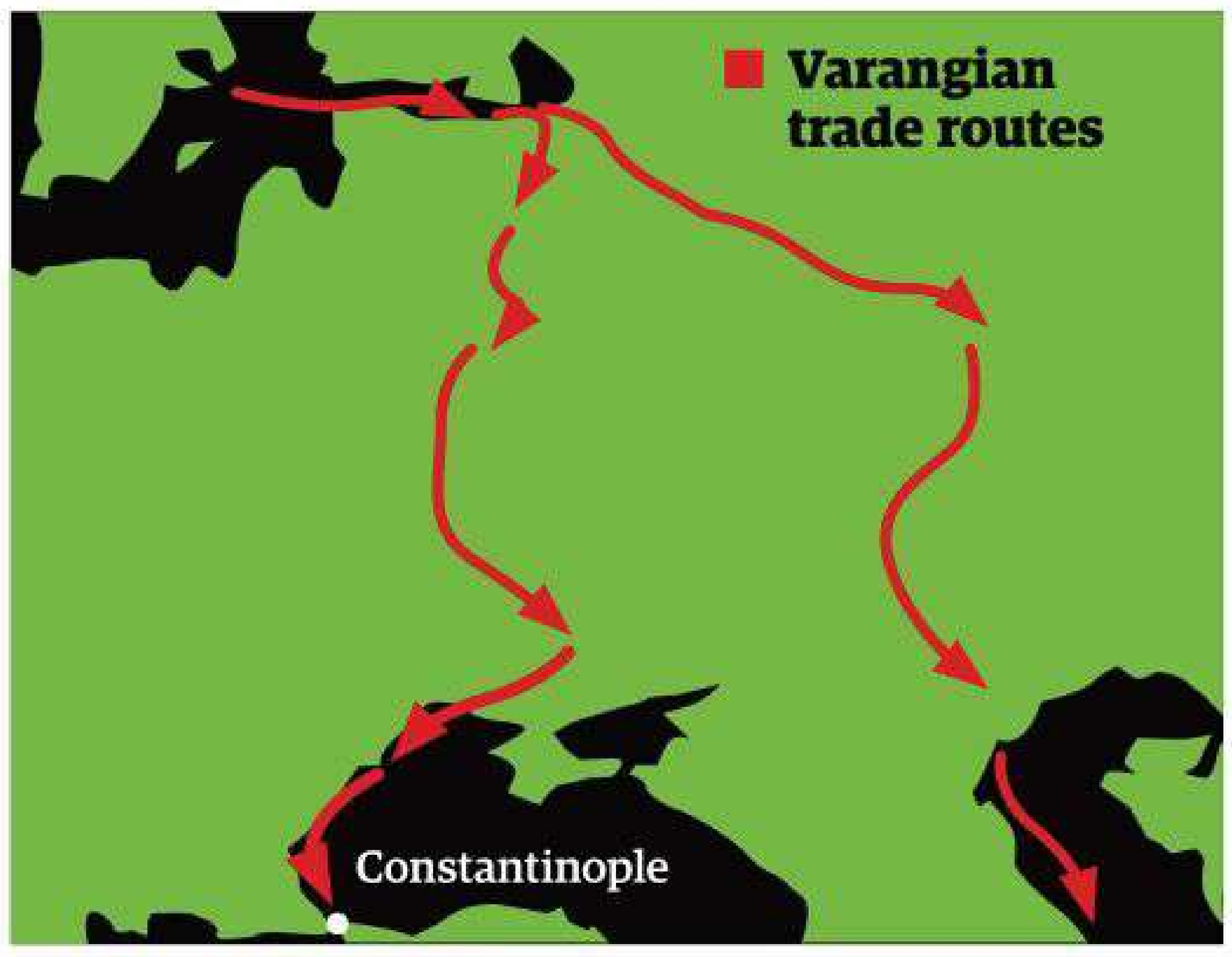


Srivijaya
Another civilisation that based its power on sea trade, the Srivijaya Empire prospered between the 7th and 13th centuries. In its heyday, the civilisation had trade links with India, China and the Malay Archipelago. Their power waned after attacks by the Chola and Malayu people.

Abbāsid Caliphate
After overthrowing the Umayyad Caliphate in 750, the Abbāsid Dynasty became the strongest empire in Asia Minor and northern Africa until the Mongols in 1258. The caliphate presided over the 'Golden Age of Islam' as Muslim merchants traded in the Mediterranean and Indian Ocean.

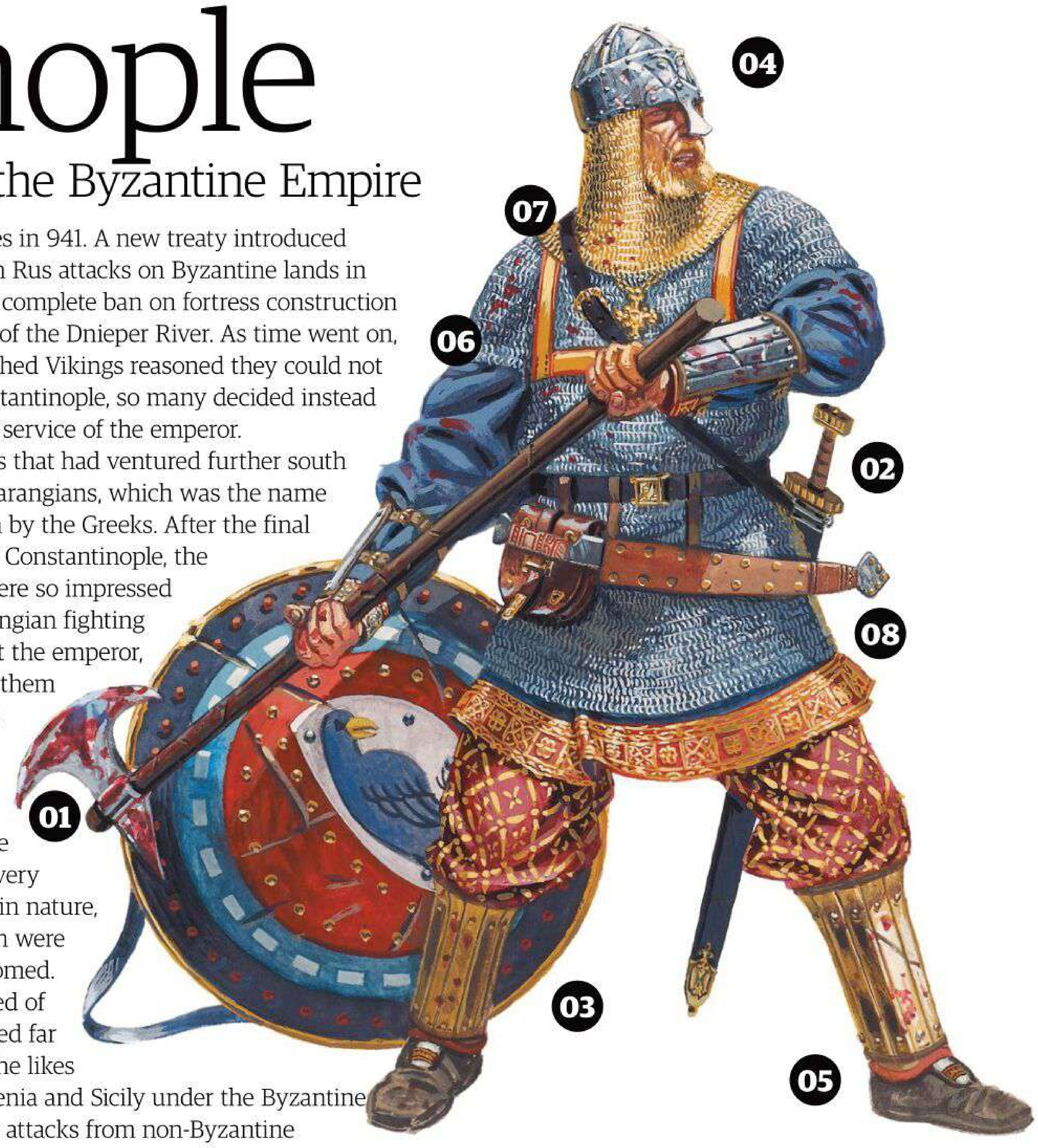
Constantinople

The Vikings venture to the gates of the Byzantine Empire



Viking lands were growing ever southwards, and by the early 10th century, an encounter with the Byzantine Empire was imminent. The movement came to a head in 860 during the siege of Constantinople, as a flotilla of 200 Viking warships emerged from the darkness and headed for the city they knew as 'Miklagard' (the Great City). After this, accounts become quite hazy, but the most likely outcome is the Vikings could only conquer the suburbs and not the fortified inner city without siege equipment. Determined to plunder the wealth of what was the biggest city the Vikings had ever seen, assaults continued, eventually resulting in the 2 September 911 commercial trading treaty. This brought friendly relations between the two states and frequent trade across the Black Sea as the Vikings took control of the Volga Trade Route from the Baltic Sea to the north and the Caspian Sea to the south. By 944, the relations soured, and Oleg's successor, Igor of Kiev, led an unsuccessful campaign against the Byzantines in 941. A new treaty introduced restrictions on Rus attacks on Byzantine lands in Crimea and a complete ban on fortress construction at the mouth of the Dnieper River. As time went on, the overstretched Vikings reasoned they could not conquer Constantinople, so many decided instead to go into the service of the emperor.

The Vikings that had ventured further south were called Varangians, which was the name given to them by the Greeks. After the final failed siege of Constantinople, the Byzantines were so impressed with the Varangian fighting mentality that the emperor, Basil II, hired them as warriors as part of his personal guard in 988. The Byzantine military was very multicultural in nature, so Viking men were warmly welcomed. This new breed of soldier travelled far and wide to the likes of Syria, Armenia and Sicily under the Byzantine banner as the attacks from non-Byzantine Varangians ended in 1043 after the Rus-Byzantine War. The loss signalled the end of the Varangian advance towards Asia as the area became either Slavic or Byzantine, not Norse. The Varangian Guard soldiered on until the 14th century, though, ensuring that there were still some Vikings standing in Constantinople.



Anatomy of a Varangian guard

The fearsome warriors who became the most brutal bodyguards of the age

01. Axe
Wielding a foot-long bladed axe, when the Varangian guards arrived, the Byzantine emperor's presence on the battlefield was confirmed.

02. Weaponry
Double-edged swords and spears would also be used if an axe wasn't available, or it was favourable for the conditions of battle.

03. Shield
Shields would be in the classic Viking round style and would be worn on the back when warriors were wielding a two-handed weapon.

04. Helmet
Varangian guards wore an iron conical helmet but were also happy to don a headdress instead in the hot Mediterranean weather.

05. Boots
Tough leather boots were covered by greaves or leg guards to protect the lower legs from hacks and slashes.

06. Clothing
A standard tunic would be worn under the armour along with metal strips that protected the wrists and forearms from slashes.

07. Armour
This elite unit had a choice of lamellar armour made out of iron or bronze plates or a chain mail hauberk.

08. Mounted infantry berserkers
The Varangian guard rode to battle but did their fighting on foot. Their heavy armour had pros and cons depending on the battle.

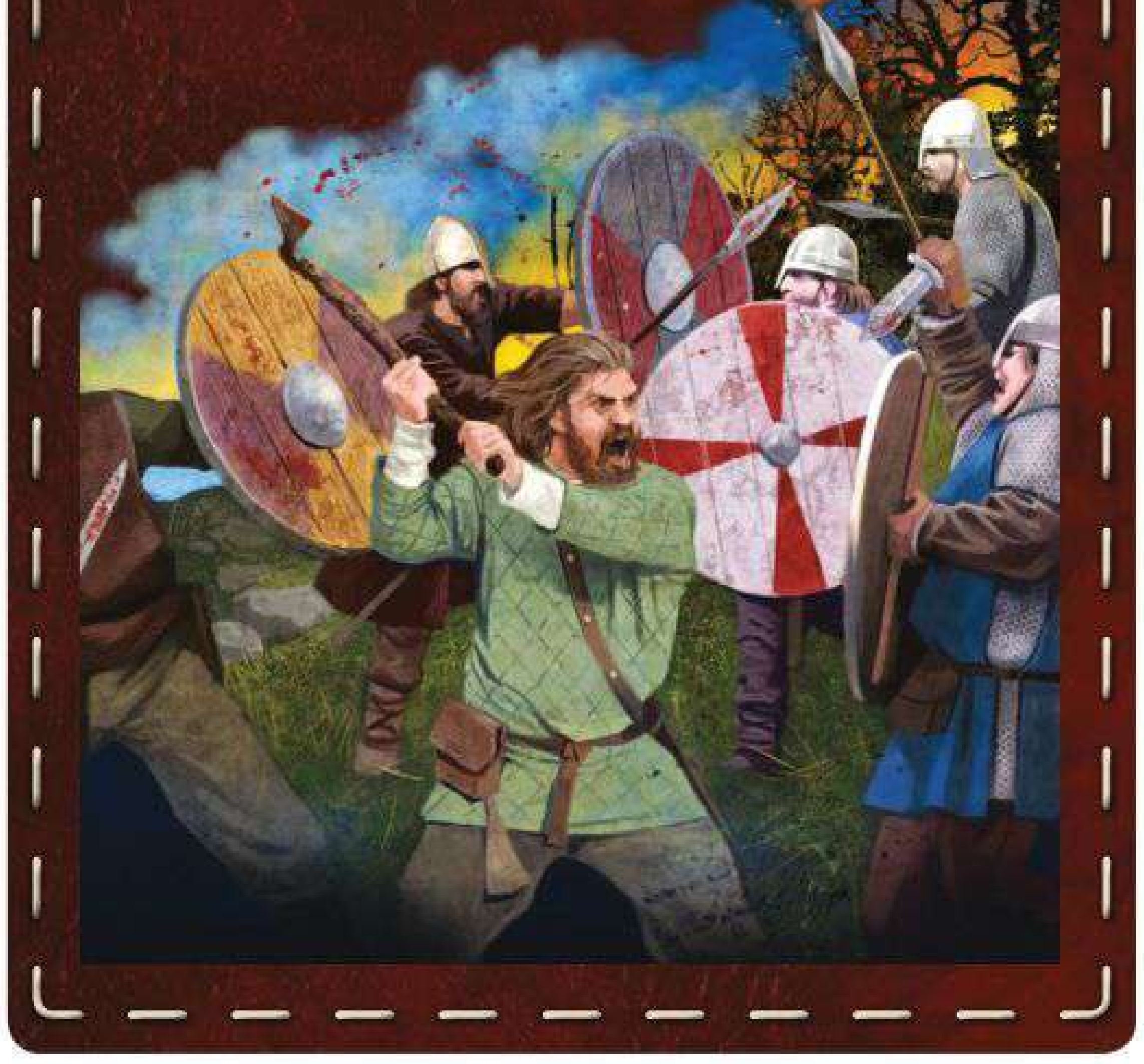
Constantinople had 12 miles of walls so even the Vikings had almost no hope of sieging it

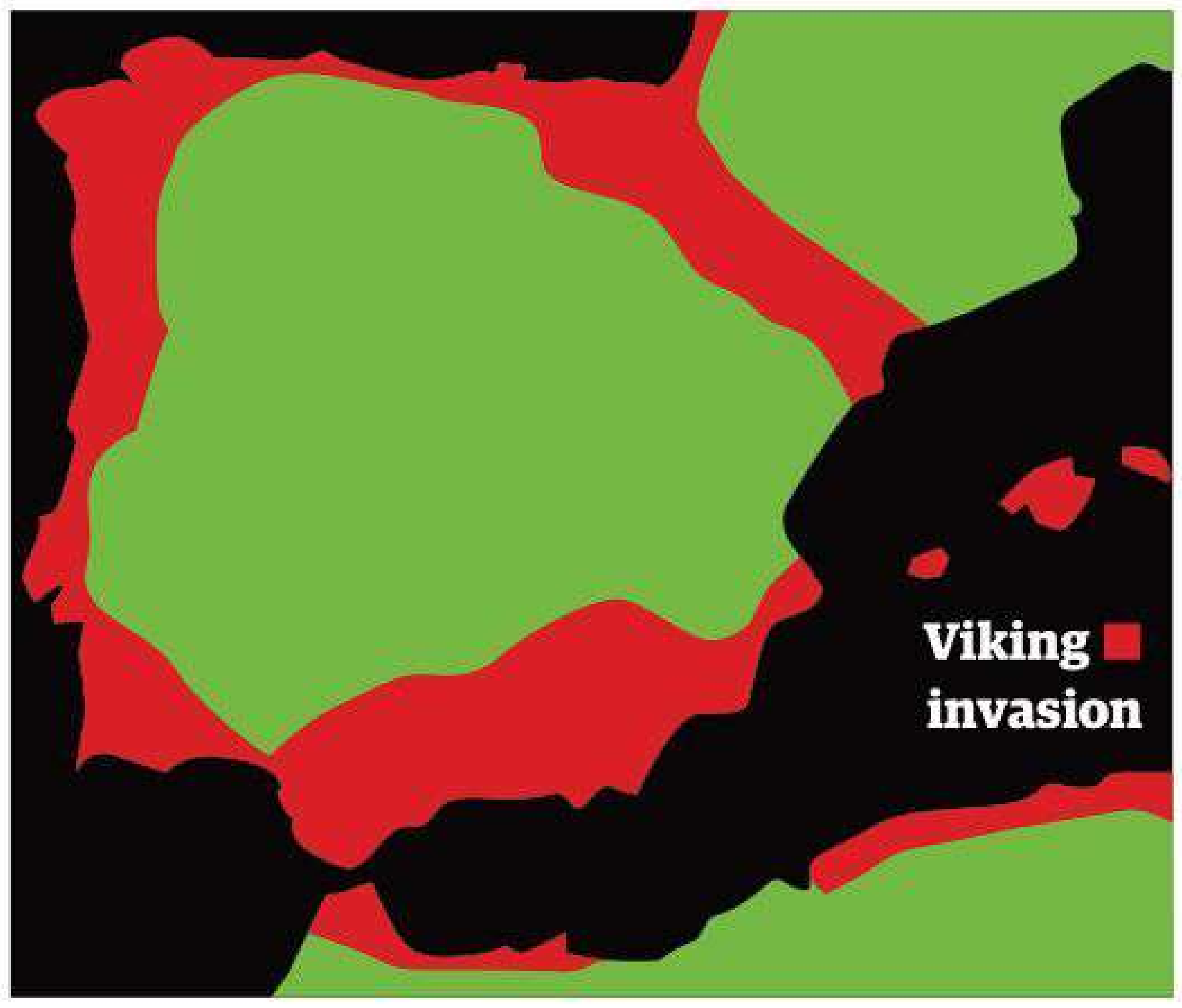
Legacy

The remnants of Viking expansion in Europe, Asia and the Americas

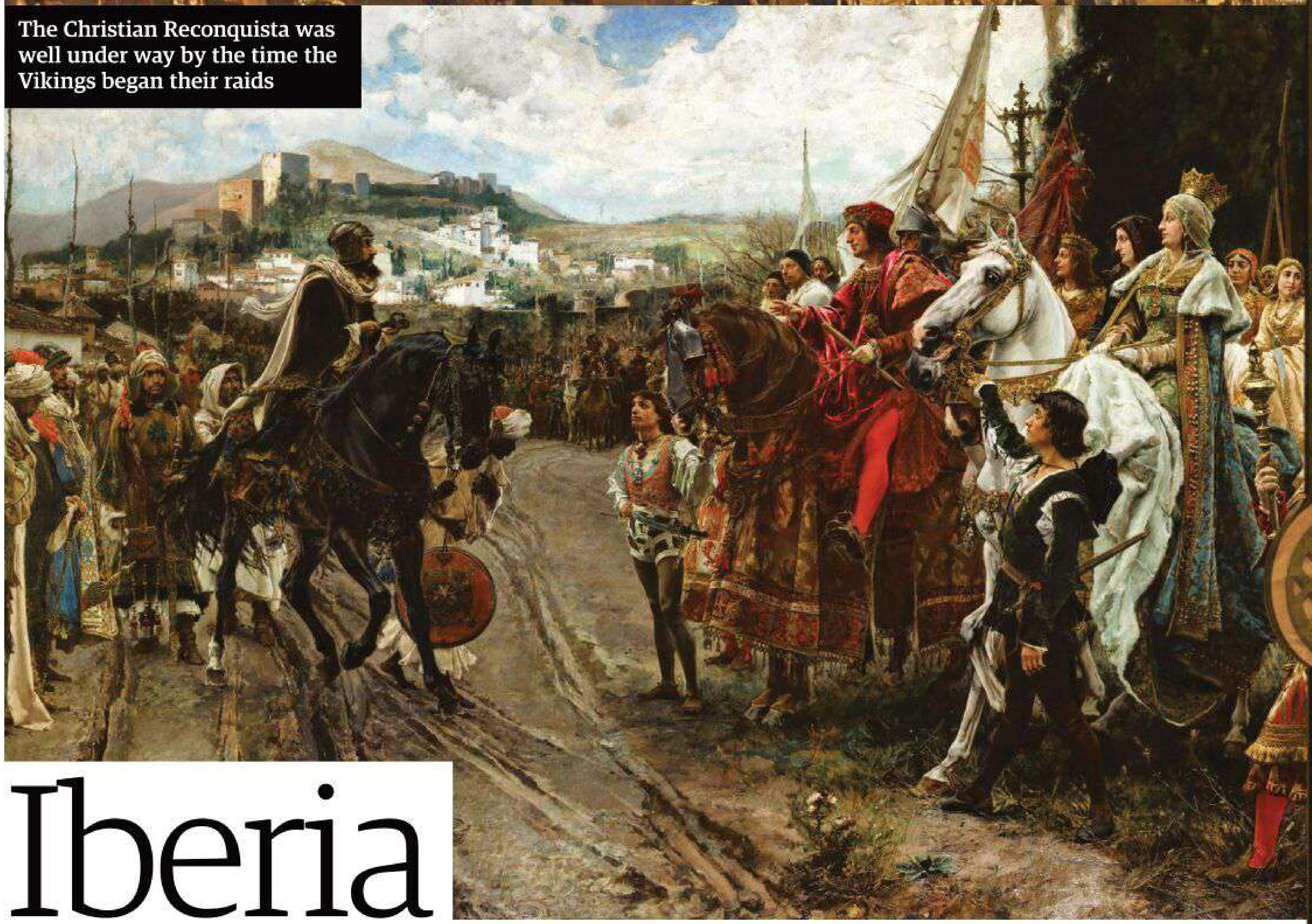
The influence left by the Vikings is greater than many are led to believe. From the Normans in the west to the Rus in the east, many civilisations that went on to dominate the late Middle Ages and beyond owe their roots to Viking expansion. The Vikings helped open the doors to pan-European trade and established urban centres at Dublin, Kiev and Reykjavik, cities at almost opposite ends of Europe. The effect of Norse culture is restricted more than it could have been as the Vikings never truly settled south of Denmark. They were an exploring people who lacked mass land armies and huge cities to stamp their authority and leadership on areas outside their own sphere of influence. They simply did not have the construction nous to establish a citadel as large or as powerful as Constantinople or Rome. Additionally, the Christianisation of Europe watered down the Nordic influence further and ended it completely when Scandinavia was fully converted in the 12th century.

Outside of Europe, Africa and Asia Minor were only briefly settled upon, so the influence seen today is from the Mongol Empire and Islamic caliphates. America suffers from the same problem, and that is why Columbus is and always will be seen as the first to discover the New World. The Viking age lasted for hundreds of years, and whether it's a city name in northern England, a type of axe or French surnames, the legacy is there for all to see.





The Christian Reconquista was well under way by the time the Vikings began their raids



Iberia

The Norse expansion into the Christian north and Islamic south of Spain

After controlling the Bay of Biscay and establishing themselves on France's western coast, the Vikings moved even further south to the Iberian Peninsula. The first known attack was made up of 100 ships launched from Aquitaine in 844 and raided both Gijon and Coruna. After meeting strong resistance, the seafarers changed tack and headed for what is now Portugal. The raids were initially small and infrequent and, as with most Nordic attacks of the age, the coast was the worst affected. Prisoners were taken and monasteries were destroyed.

The first few assaults were mostly concentrated in the north of the Christian kingdoms of Asturias and Galicia. The southern Islamic part of Spain, al-Andalus, was targeted as well. Seville became a Viking city for six weeks in 844 and Lisbon was plundered for all its worth. The attacks came at a bad time for the Muslim population, who were enduring the start of the Christian Reconquista. Despite the ability for longships to sail from Normandy in less than a week and evidence of longphorts, Iberia would soon become a bridge too far for the Norsemen.

As the attacks subsided, the lands were regained from the Vikings. The Muslim leader, Abd al-Rahman II, took back Seville and sent the heads of 200 Viking warriors to his Moroccan allies. The Vikings returned in 859 led by Bjorn Ironside and Hastein. They sailed around the peninsula in search of southern France and Italy. This turned out to be a shrewd move as both the Muslim and Christian settlements were too strong for long-term attacks to be worthwhile and repelled the Vikings before they could get close to Seville this time. The Norsemen returned north to France but their descendants, the Christianised Normans, would be back in the Mediterranean in later centuries.

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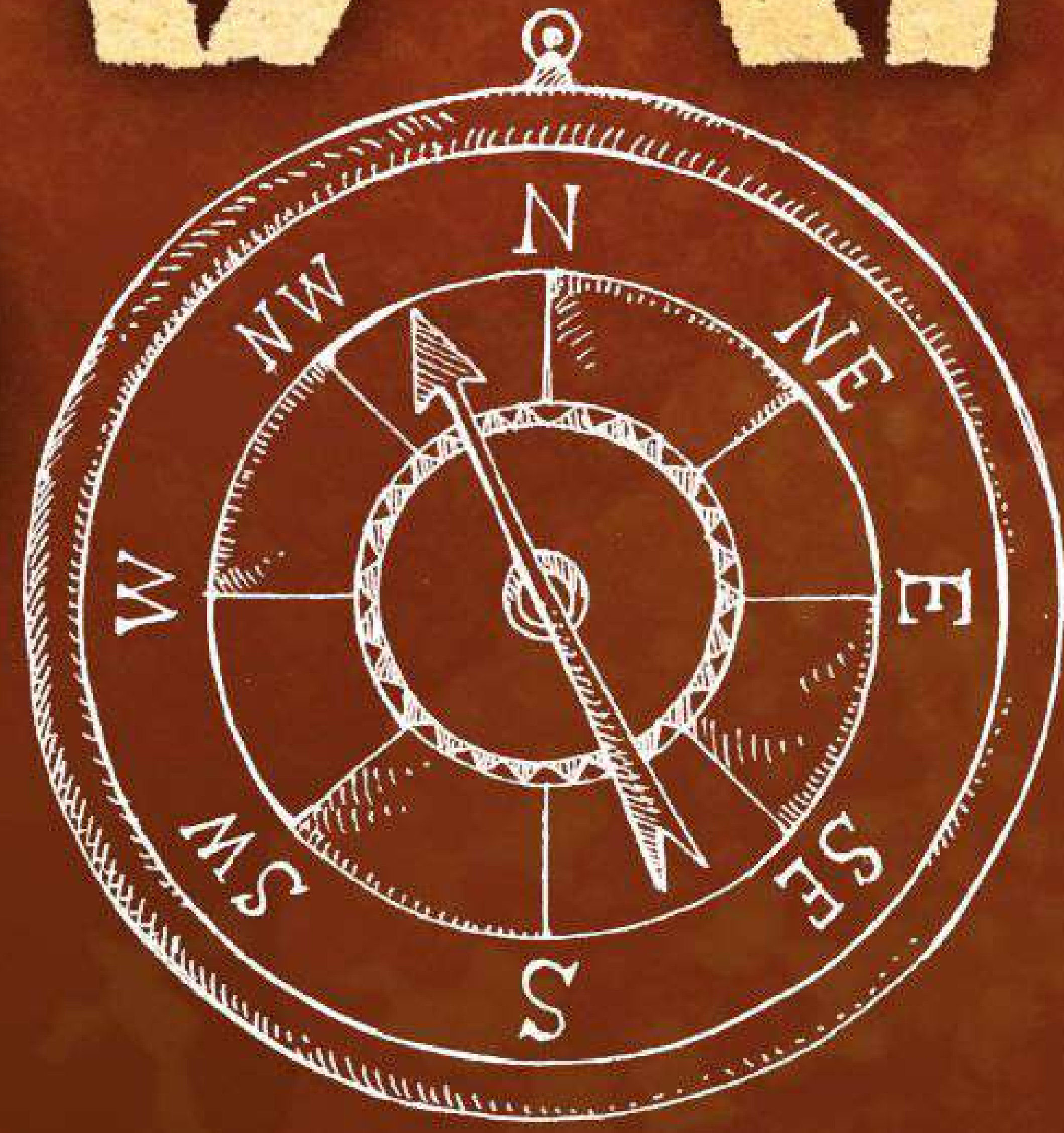
MARCO POLO



Journey to the court of Kublai Khan

Travelling to locations so exotic many would not believe his tales, Marco Polo lived an extraordinary life filled with wonderment and awe

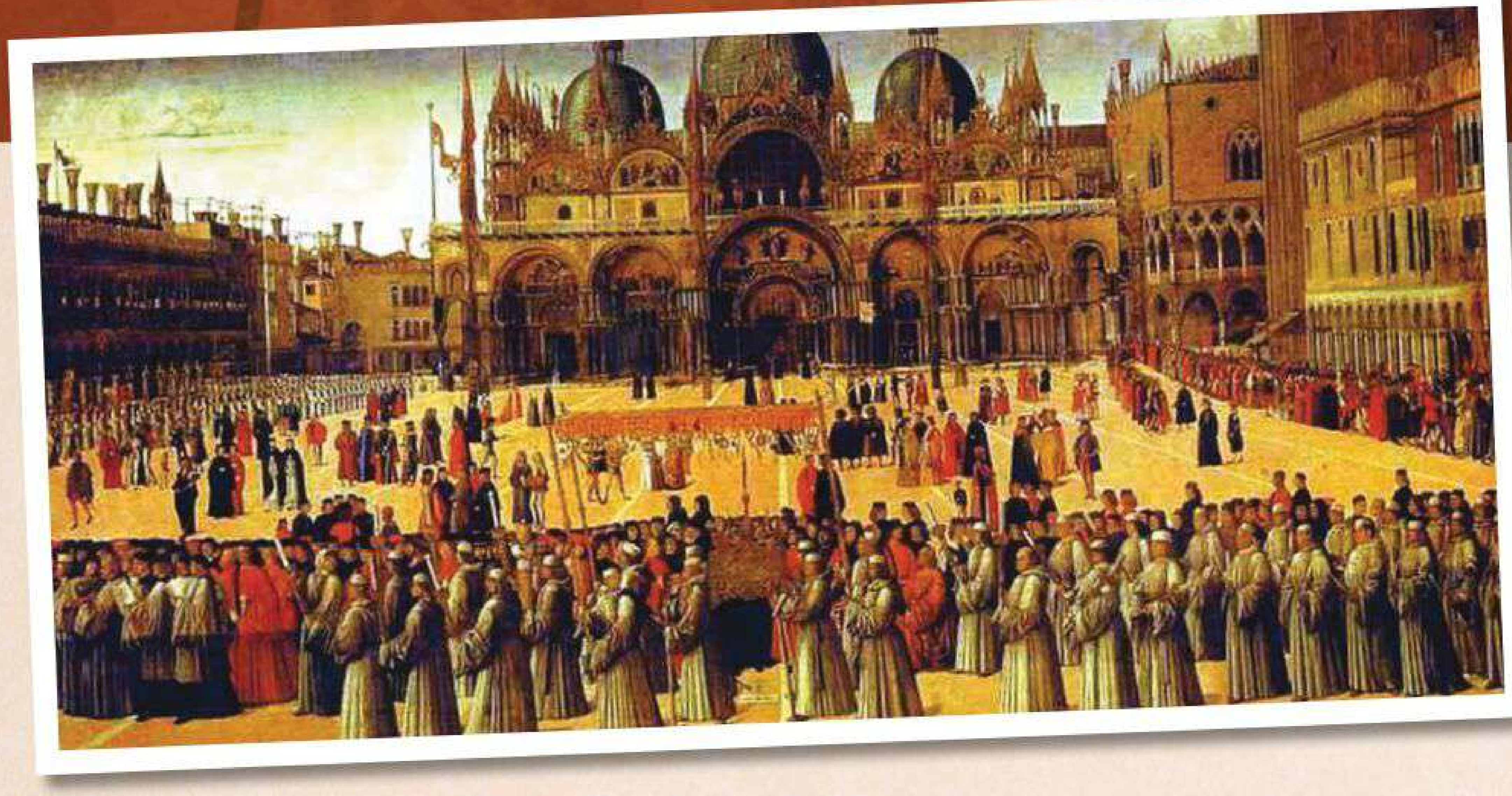
Marco Polo's life sounds like a fairy tale. An ordinary boy from Venice is taken by his father and uncle across Asia and meets the world's most powerful ruler, who employs him for 17 years, after which he returns home and records his journey in the most famous travel book of all time.

It is an exceptional story, and true (mostly). Even more remarkable – it came about by a succession of pure chances.

In 1253, a year before Marco's birth, his father Niccolò and uncle Maffio left Venice for Constantinople, the capital of the eastern part of the Roman Empire. It had been made a Christian city by the Emperor Constantine, and was now the seat of Orthodox Christianity, as opposed to Rome, the seat of the Catholic west. But Constantinople was in decline, its economy dominated by foreign traders, notably Venetians. Bringing a ship-load of wares, Niccolò and Maffio set about exchanging their goods for jewels. After six years of profitable trade they looked towards Crimea, where they could use their jewels to buy Russian wheat, wax, salted fish and Baltic amber, all much in demand.

Here fate played a role, several times over. They found that the two Venetian trading bases, Soldaia (today's Sudak) and Caffa (Feodosiya), were just inside the newly established Mongol Empire. Crimea, taken by the Mongols in 1238, was part of the so-called Golden Horde, the western section of an empire that stretched from Russia to China. To escape rivals they headed on east 1,000 kilometres to the local capital, Sarai, a city of tents and wagons on the Volga. After another successful year, they were about to set off home when they learned that Venice's rival city-state, Genoa, had driven the Venetians out of Constantinople. There was only one route possible: eastwards again to Bukhara, then a long return via Afghanistan. But once again fate intervened. A civil war between Mongol sub-states penned them in Bukhara for three years. At that point an envoy from Persia's Mongol ruler met them, and was astonished to find two 'Latins' who by now spoke good Mongol. He told them to go on eastwards, all the way to China, where his lord and master, Genghis's grandson Kublai, would give them a good welcome. "Sirs," he said, in Marco's account, "You will have great profit from it, and great honour." They would not be the first Europeans to be guided across Asia along the Mongol pony-express routes, but their two predecessors, both priests, had gone to Mongolia, not China.

The Polos arrived in Kublai's capital, Xanadu, and were well received. As luck would have it, Kublai was in need of a Christian presence to counterbalance the influence of local religions. So he asked the two Venetians to go home and return with 100 priests and some holy oil from Jerusalem (perhaps to be used as a magic charm). He gave them a golden safe-conduct pass that allowed them to use the imperial post-roads and sent them



Marco Polo's Venice

Medieval Venice, once a village in a bog, was a place of palaces, canals and glorious churches. From his birth, probably in 1254, Marco, raised in a fine merchant's house near the Rialto Bridge, would have admired the ornate splendours of St Marks, its west portal displaying four Roman bronze horses seized from Constantinople in 1204. He would have seen the city's ruler, the Doge, in state rituals designed to emphasise power and wealth reaching far beyond the city. With a navy that dominated the eastern Mediterranean, Venice had built an empire, with colonies, ports and islands by the dozen down the Adriatic coast. It owned Crete. Venetian enclaves drew merchants around Greece, to Constantinople and eastwards, across the Black Sea to Crimea, where two bases gave access to the Russian 'river-roads' of the Don and Volga. But these bases now gave access not just to Russia, but to all Asia. In 1238, Crimea had fallen to a vast new entity – the empire built by Genghis Khan, and now, 30 years after his death, ruled by his family, all owing allegiance to Genghis's grandson, Kublai Khan, some 6,000 kilometres away in north China.

off. After another three years of travel, the brothers reached Venice. It was 1269. They had been away 16 years, to find that Niccolò's wife had died and their son Marco was a well-educated 15-year-old ready to see the world.

Two years later, in September 1271, father and uncle set off again with Marco, via Jerusalem to pick up the holy oil. By yet another chance, a local prelate, Tedaldo Visconti, had just been made pope. Hoping that all China would fall to Christianity, he wrote a hasty letter to Kublai, urging conversion. He also gave them two – not 100 – priests, who quickly turned back.

The journey rapidly became an epic. There was war everywhere: Muslims fighting Crusaders, Mongol sub-empires fighting each other. Their golden pass would be no guarantee of safe-conduct. They avoided trouble by heading through eastern Turkey, Iraq and Persia, down to the port of Hormuz (present day Bandar-e Abbas). The exact route is unclear, because by the time Marco came to dictate his story, his memory was vague and he himself an unreliable witness.

But his account contains much truth. He claims to have been chased by robbers known

as Caraunas ruled by a king called Nogodar. This is a reference to a Mongol frontier force called Qaragunas and their commander Negüder, who turned themselves into marauders swinging unpredictably between loyalty, rebellion and pillage. Their descendants became today's Hazara and Mogholi minorities in Afghanistan.

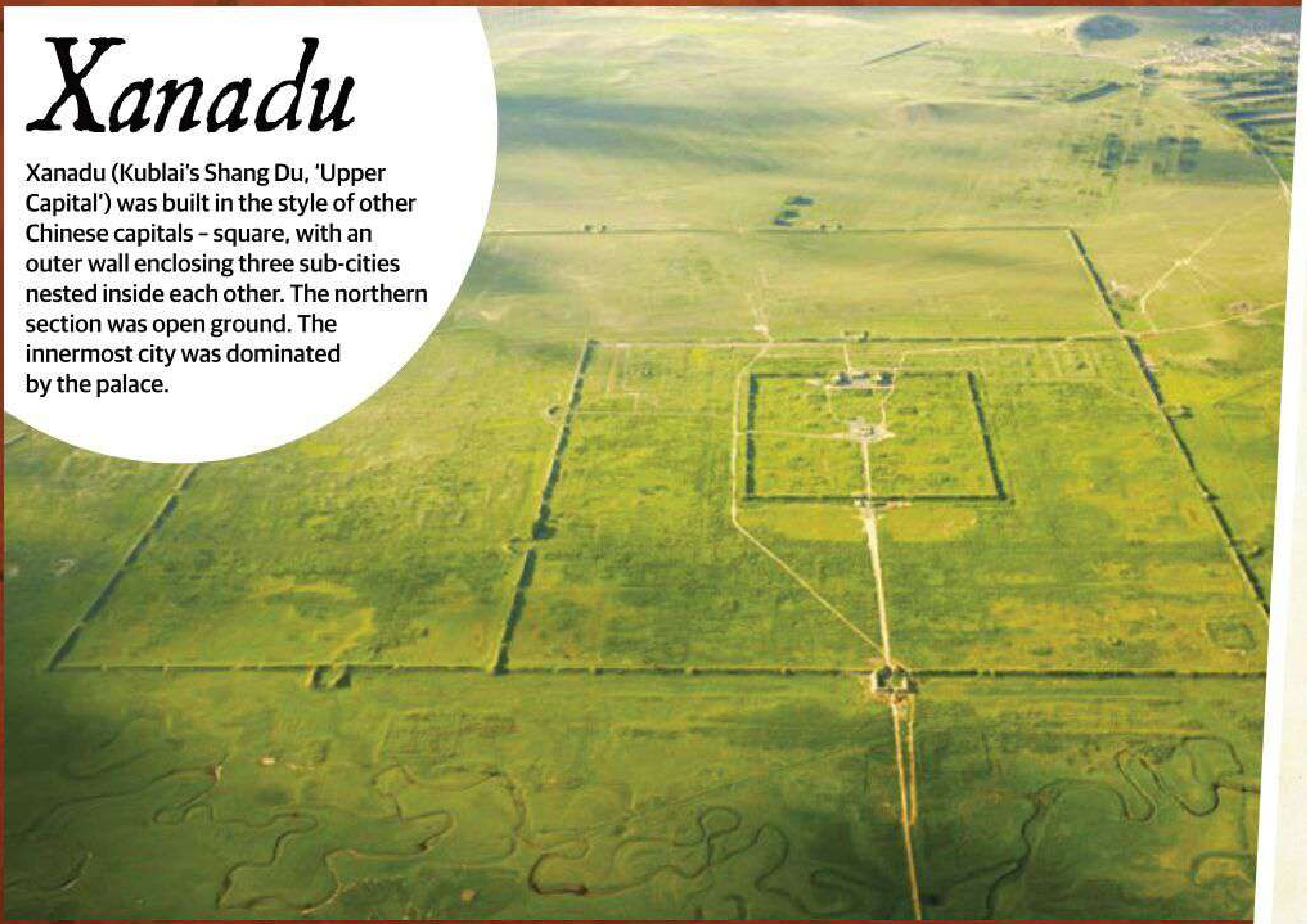
Hormuz was a major port, and appallingly hot, where a certain wind, the simoom, could cook a corpse. Perhaps they were hoping to sail to India, but were put off by boats stitched together with coconut twine. They back-tracked to the north east across present-day Iran, picking up details of the assassins, the murderous Muslim sect named 'hashishin' after their supposed habit of smoking hashish. Marco tells fanciful tales of young men drugged, taken into a beautiful garden and seduced by damsels "singing and playing and making all the caresses and dalliance which they could imagine," before being sent off to kill. The assassins' HQ, Alamut, a grim fortress in the Elburz mountains, was actually 700 kilometres off Marco's route. But the stories would have been current, because the Mongols destroyed Alamut and the assassins themselves in 1257.

In Afghanistan, Marco describes Balkh, twice ruined by Genghis Khan but now somewhat resurrected as "a noble city and great." He also reveals that he had a young man's eye for female beauty. In one area, the inhabitants were very handsome "especially the women, who are beautiful beyond measure," and in another women padded themselves with cotton trousers "to make themselves look large in the hips."

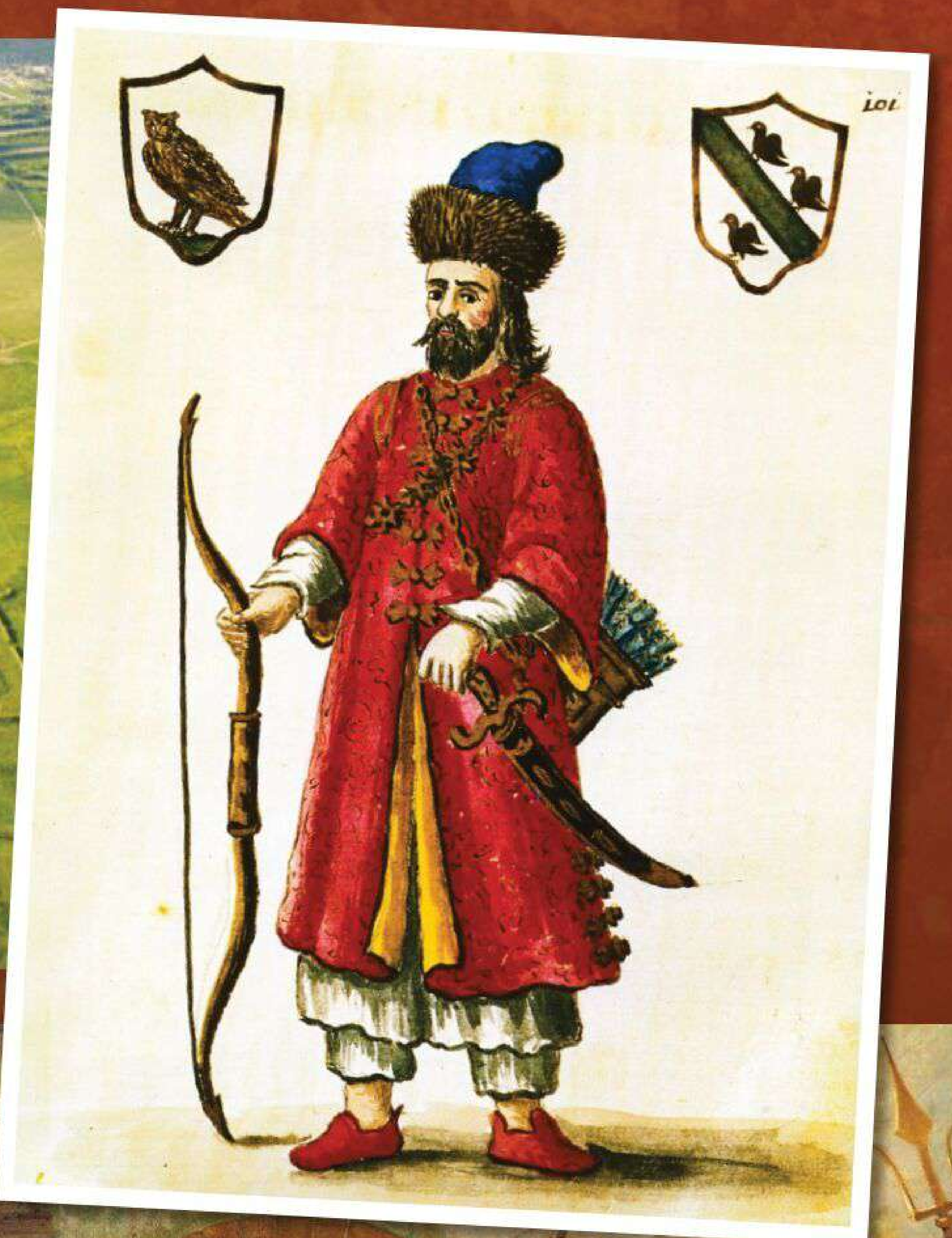
Then onwards and upwards, through what would become the Wakhan Corridor, a narrow strip of Afghanistan formed by Britain in the 19th century to create a barrier between British India and imperial Russia. It was an established route into China, but a tough and awe-inspiring one through the Pamir mountains, where glaciers grind down from 6,000-metre-high peaks and (according to Marco) the cold was so intense that no birds flew. He followed the Wakhan River up into a land of perpetual snow, where there lived huge sheep with horns 1.5 metres across, the sheep that would, in 1840, be named after him, Ovis Poli, the Marco Polo Sheep. He liked it up there because the pure air cured him of some unspecified complaint.

Descending from the 5,000-metre Wakhjir Pass, Marco and the elder Polos – presumably with a train of horses, camels, yaks and guides – would have come to the caravanserai of what is today Tashkurgan, some 250 kilometres south of Kashgar. Marco does not mention this part of the journey, despite the narrow track, tumbling river and teetering bridges of the Gez Defile and the lone, glaciated bulk of Mustagh Ata, the Father of Ice Mountain. His memory was dominated by the gardens, vineyards and estates of Kashgar, the first major city inside today's China. Then, as now, this was Uighur territory. Marco is rude about the Uighurs, "a wretched, niggardly

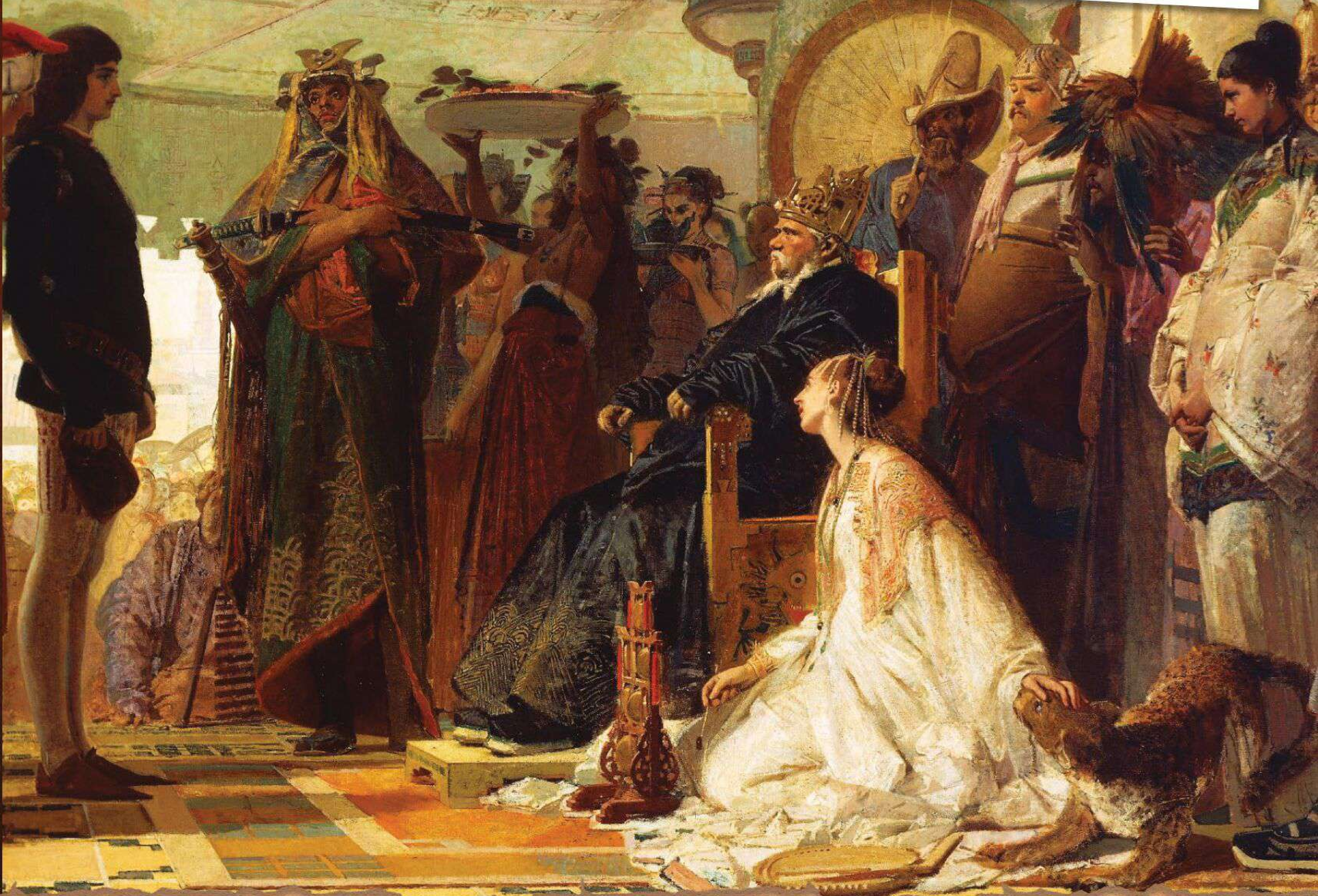
Xanadu



Xanadu (Kublai's Shang Du, 'Upper Capital') was built in the style of other Chinese capitals – square, with an outer wall enclosing three sub-cities nested inside each other. The northern section was open ground. The innermost city was dominated by the palace.



Marco was about 21 years old when he first met Kublai Khan, and he would stay with the emperor for 17 years



set of people, who eat ill and drink more ill." In fact, they were a sophisticated people with their own writing system, whose scholars were valued as scribes across much of Asia.

East of Kashgar lies the dead heart of Asia, the gravel wastes and shifting dunes of the Tarim Basin, with country-sized wildernesses – the deserts of the Taklamakan, Lop, Gashun Gobi and Kumtag. Nothing much grows here but scattered camel-thorns, and very little lives but sand-flies, ticks and a diffuse population of wild camels. Marco plays up the dangers, speaking of sand-spirits and demon voices calling men to their deaths. No Medieval traveller would have crossed it – they didn't have to, because there was a long-established route, later to be termed the Silk Road, that led along the southern fringes, from oasis to oasis, fed by rivers running down from the Kunlun mountains. Marco mentions towns – Yarkan, Khotan, Charchan – which still exist. Others have vanished beneath the drifting sands, notably Lou Lan, whose rediscovered ruins are now off-limits because China tests its nuclear weapons nearby.

This is China's far west, and it was Kublai's far west as well. Like a comet at the edge of the solar system, Marco was now beginning the long, slow fall towards Xanadu, the empire's Sun. But Kublai's control of the Western Regions, referred to by Marco as "Great Turkey," was tenuous. Much of it was claimed by Kublai's rebellious cousin, Kaidu, who remained a thorn in Kublai's side for 40 years.

"Marco was as close to the emperor as any minister"

Marco tells a good story about Kaidu: he had a daughter, the formidable Aijaruc (which he says means Bright Moon; in fact it means Moonlight). So big – "almost like a giantess" – strong and brave was she that no man could match her. Kaidu doted on her, and wanted to marry her off. But she always refused, saying she would only marry a man who could beat her in wrestling. Every challenger had to put up 100 horses. After 100 bouts, Aijaruc had 10,000 horses. Then a rich and powerful prince arrived, offering 1,000 horses. They wrestled. She won. Thereafter, Kaidu took her on campaigns, where she proved her worth dashing into the enemy to seize some man "as deftly as a hawk pounces on a bird." Is there any truth in this? A little. Mongolian women did indeed have a reputation for toughness, and Kaidu did indeed have a favourite daughter, but her name was Kutulun.

At the eastern end of the desert, Marco passed the western end of the Great Wall, built 1,000 years before to keep out nomads like the Mongols. It would not have looked great to him, because it was made of reeds and earth, and had been abandoned for half a century, with the Mongols ruling on both sides of it. If he noticed it at all, he did not think it worth a mention.

By now (probably the spring of 1275), it seems he and his entourage had been noticed. Messengers had galloped ahead with news that foreigners were coming – Mongol-speakers, bearing a golden pass, without doubt the 'Latins' who had been in Kublai's court ten years previously. Guards rode "a full 40 days" to meet them, and guide them to Xanadu, where Kublai was in residence.

At this point, perhaps because the surroundings were greener, Marco speaks of two animals. It is sometimes asked if Marco actually experienced everything he described. The answer is: almost always. These descriptions are proof. The first refers to a species of shaggy cattle, which he said with some exaggeration were "as large as elephants." This is the first western description of a yak, then unknown in Europe. The second is a deer the size of a dog, which he calls "a very pretty creature." It is a musk deer, from the neck gland of which comes the musk so desired by perfume-makers. He even guesses at its Mongolian name, gudderi – khüder in modern Mongolian – which no one could learn except by experience.

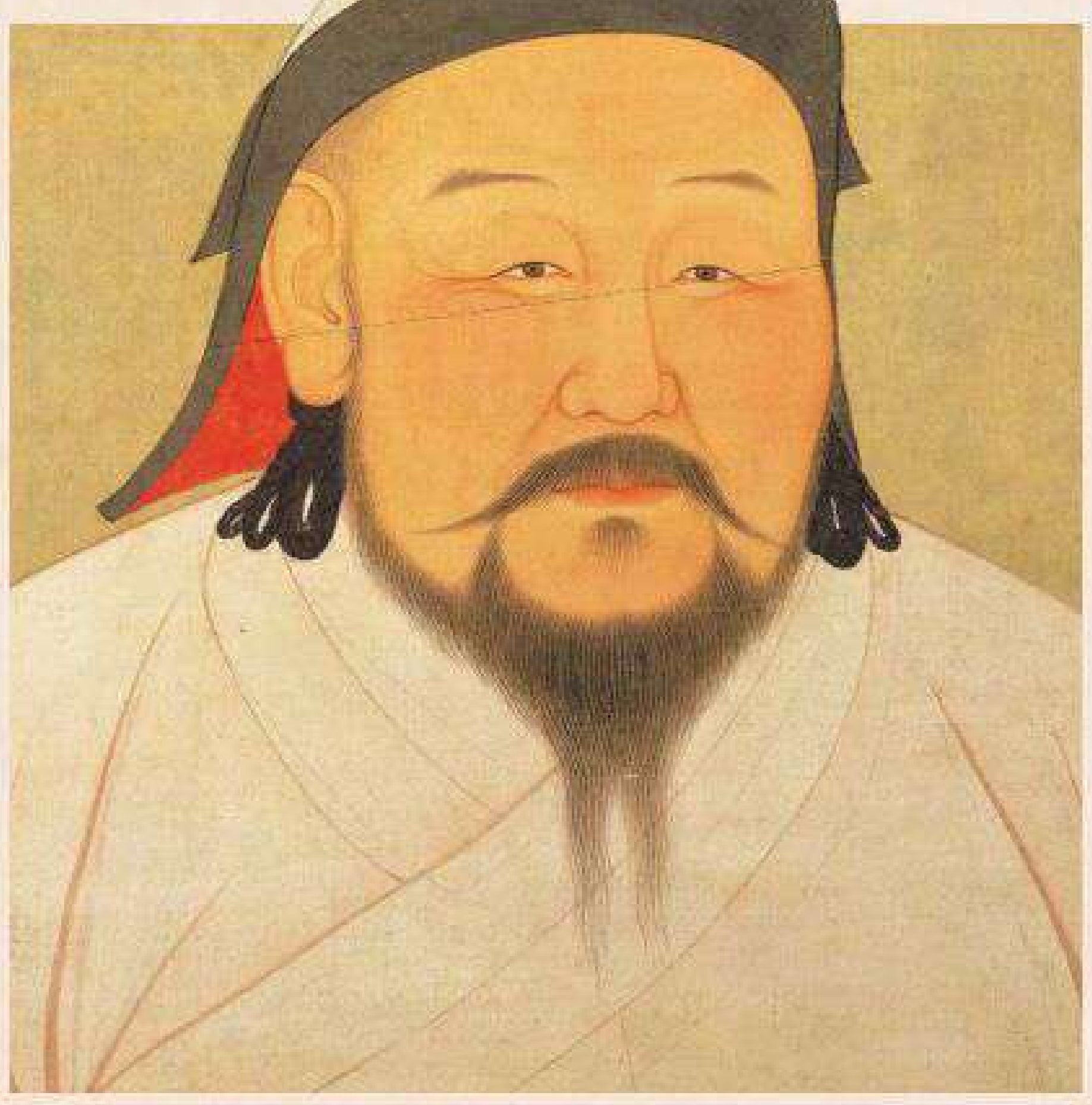
Now half way across modern China, Marco came to Yinchuan, which had been the capital of the Tangut people, a separate empire known as Western Xia, which had been destroyed by Genghis Khan in 1227. Marco's terminology is not exactly right, but almost so. He picked up the Mongol name for Yinchuan (Egrigaia in his text, Eriqaya in Mongolian), and the name of the local mountain range (Helan Shan, which he transcribed as Calachan).

On then across the Ordos region of Inner Mongolia, past villages and cultivated fields, to a place of "a great many crafts such as provide for the Emperor's troops." This was Xuanhua, on the main road leading from today's Beijing to what was once the Mongolian border. Here, he would have turned right for Beijing, Kublai's new capital, or left for Xanadu, Kublai's first capital and now his summer residence. It was summer. His guides knew that their lord was in Xanadu. There was only another 250 kilometres to go.

Xanadu is a name derived from the Chinese Shang Du, 'Upper Capital,' as opposed to Beijing, which was Dadu, 'Great Capital'. We spell it that way because that was how the poet Samuel Taylor Coleridge spelled it in his famous poem written on waking from a dream in 1797:

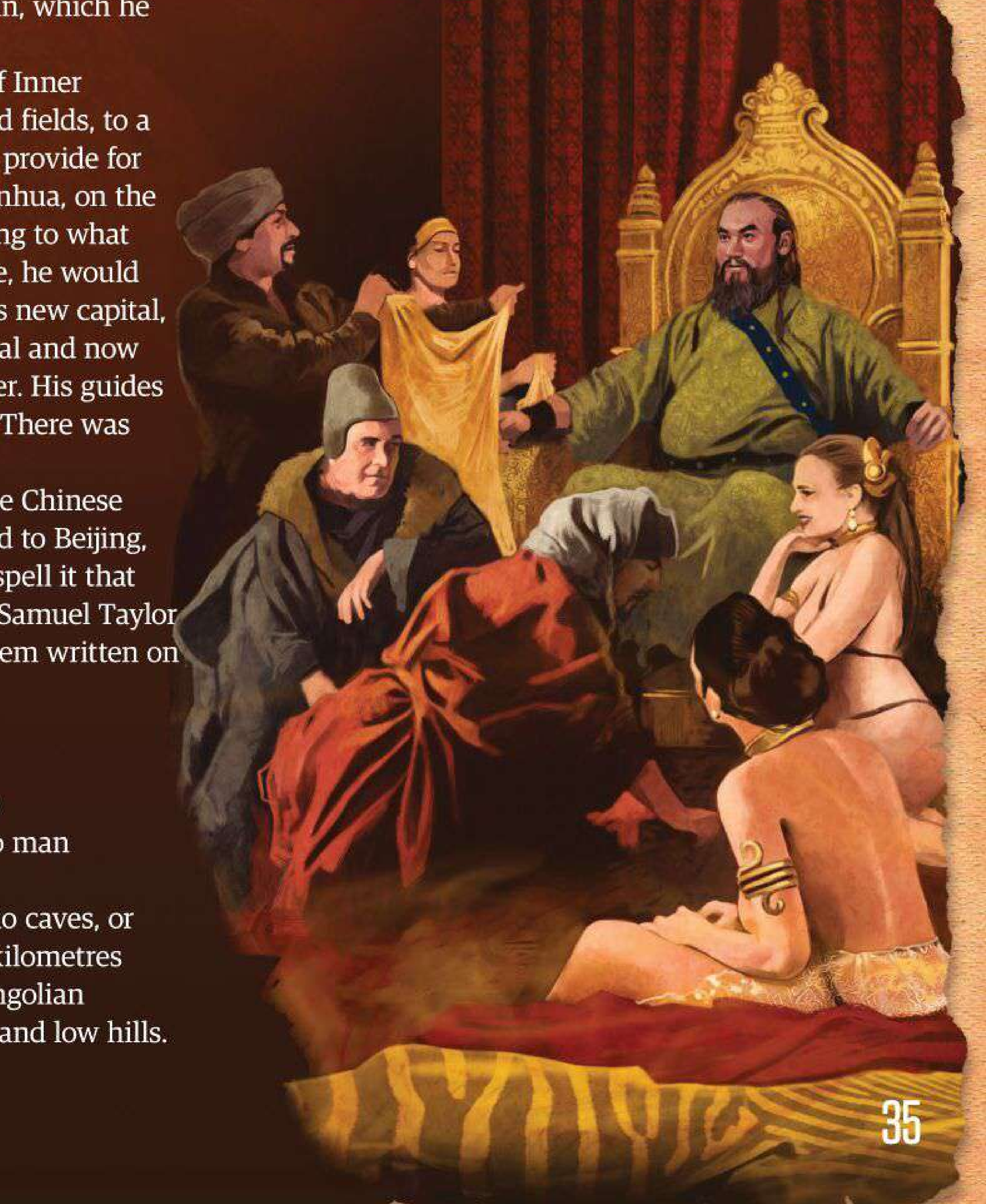
In Xanadu did Kubla Khan
A stately pleasure dome decree
Where Alph the sacred river ran
Through caverns measureless to man
Down to a sunless sea.

There was a 'pleasure dome', but no caves, or Alph, and the Pacific is almost 400 kilometres away. Xanadu was and is on the Mongolian plateau, a place of rolling grasslands and low hills.



The real 'pleasure dome'

Marco described what he called a 'Cane Palace' in Xanadu, recalled in Coleridge's poem: "In Xanadu did Kubla Khan/ A stately pleasure dome decree." Because the poem records a dream, the palace is easily dismissed as a legend. In fact, Marco described a real building. By 'Cane' he meant bamboo, available in semitropical Yunnan, conquered by Kublai in 1253. Cut in half lengthwise to form overlapping, 15-metre 'tiles', bamboo stems formed a domed roof. To counteract the lift induced by high winds on the aerofoil roof, it was held down with '200 silken cords', in Marco's words. Probably used as a hunting lodge in summer, its real purpose was political – it symbolised Kublai's two cultures, Mongolian and Chinese. It combined the style of a Mongolian tent – easily dismantled for winter storage – with Chinese materials and techniques.

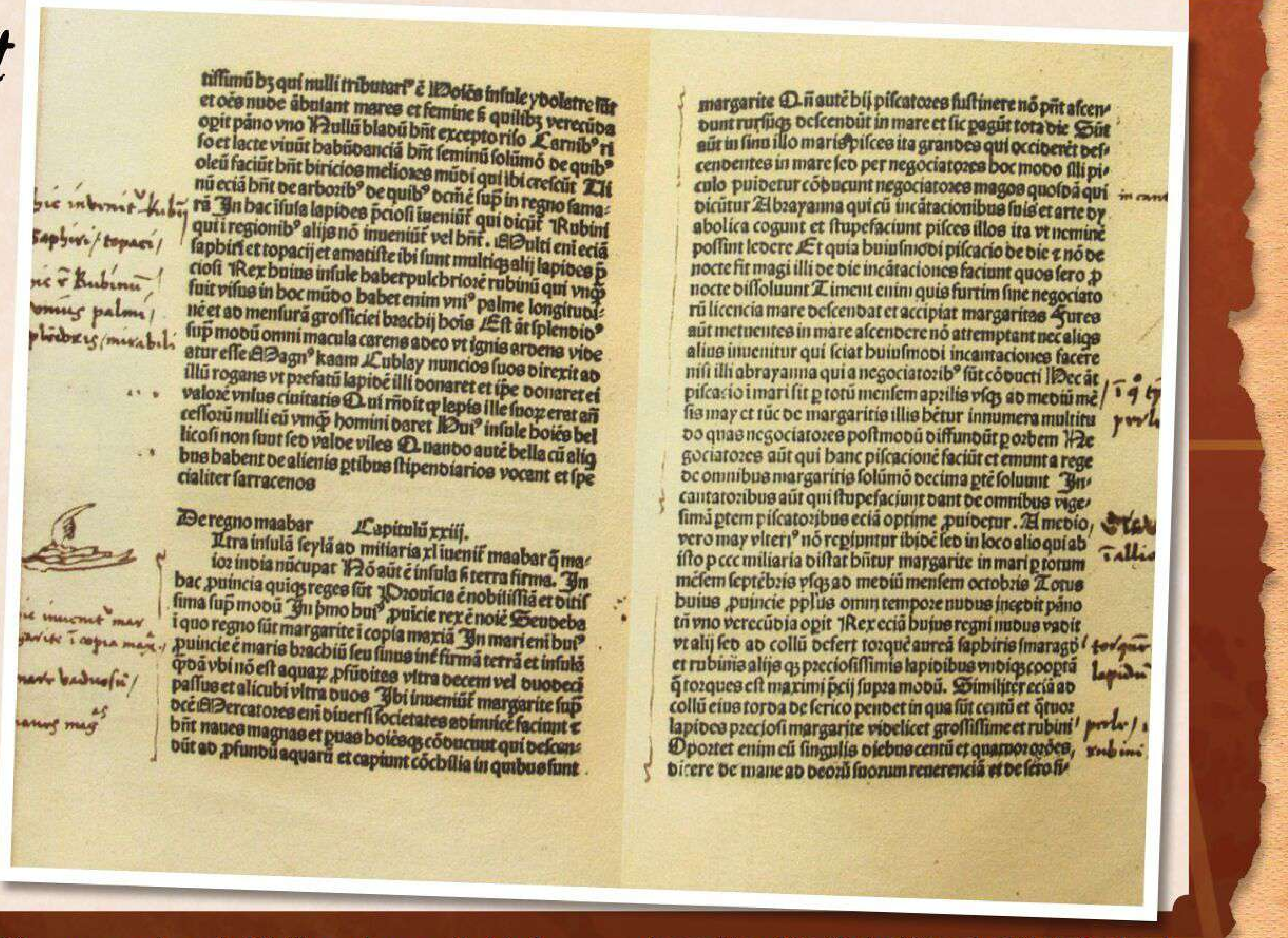


Marco's impact

Marco's book was dictated in haste while a prisoner of war in Genoa in 1299. It is usually called 'Description Of The World', or simply' Travels'. Since the book predated printing, it was 'published' by scribes and translators. The original was lost, and the copies were corrupted by additions, deletions and errors. And since there was no other information, people came to see the 'Travels' as a collection of fables.

It took almost exactly two centuries for his book to make its greatest impact. As learning took off in the 15th century, accounts by later travellers suggested that he was essentially truthful. The late-15th century was the great age of exploration as Europeans tried to reach the east, seeking trade with south-east Asia and the Chinese mainland, known as Cathay (Cataia, as Marco called north China, from the Mongolian 'Khiatad').

As the Portuguese opened the sea-route round southern Africa, Christopher Columbus, inspired by both Marco and a map based on his account, suggested a quicker route westwards across the Atlantic, thus reaching China directly. But the Portuguese were committed to the African route, and rejected Columbus, who proposed the same idea to the Spanish rulers, Ferdinand and Isabella. With nothing to lose, they backed him. The result: Columbus's discovery in 1492 that the ocean did not stretch all the way to China. There was another continent in the way. Columbus thought he had arrived in China. It was, of course, America.



In Marco's day, this Chinese-style city had 120,000 inhabitants, approached along the so-called Royal Road, which cut through a mass of round felt tents, horses, camels and traders.

Guided through the main gate to "a very fine marble palace," the three were taken into an audience with Kublai. He was delighted to see his 'Latin' envoys back again. Marco was overwhelmed with admiration of "the most potent man that ever hath existed." They knelt, then prostrated themselves, rose, and described their journey. They presented the pope's letter and the holy oil. Then Kublai asked about Marco.

"Sire," said Niccolò, "He is my son and your liegeman," handing Marco over to Kublai's service.

"Welcome is he too," said Kublai, beginning a relationship that would last 17 years. In that time, Marco was as close to the emperor as any minister, perhaps closer, because Kublai valued him as an independent source of information, untouched by the court's many rival groups. Speaking good Mongolian, Marco went on at least five great journeys to the corners of Kublai's Chinese possessions, probably to gather information on foreigners and minorities. Almost certainly, he was a member of the emperor's keshig, his 12,000-strong personal bodyguard. Later, he wrote of what he saw for Europe's Christian readers, but did not reveal why he was sent, probably because it implied too close a relationship with a non-Christian ruler.

Between his journeys, he experienced court life in all its magnificence. He accompanied Kublai as he travelled between Xanadu and his new, main capital Beijing, a journey that took three weeks, with Kublai riding in a specially designed room strapped onto four elephants, harnessed abreast. Beijing, chosen because it was the key to the conquest and rule of all China, was built almost from scratch after the destruction caused by Kublai's grandfather, Genghis Khan: temples, gardens, lakes and a palace of varnished woodwork and glittering tiles. Uncounted halls, treasure rooms, offices and apartments surrounded an audience hall that could host 6,000 diners. In nearby parklands, deer and gazelle grazed. Court life revolved around 150 long-established rituals, controlled by four government departments and a Board of Rites. Other departments regimented 17,000 scholar-officials. The three main state occasions were the Khan's birthday at the end of September, New Year's Day and the spring hunt.

> "Kublai valued him as an independent source of information"

For New Year's Day and the khan's birthday, gifts flowed from the far reaches of the empire. Horses, elephants and camels paraded, thousands dressed in white (for luck) touched their foreheads to the floor in adulation and joined a vast feast, with the emperor and his entourage on a raised platform, served by ministers with napkins stuffed in their mouths, so that "no breath or odour from their persons should taint the dish or the goblets presented to the Lord."

On 1 March, Kublai supervised hunting on an industrial scale. In 40 days, the hunt covered some 500 kilometres. Marco describes 14,000 huntsmen and 10,000 falconers (though the numbers are probably exaggerated) with gyrfalcons, eagles, peregrines, hawks and goshawks, backed by 2,000 mastiff-like dogs, all hunting hare, foxes, deer, boar, even wolves. At night, the emperor camped in a tent-city that surrounded his own huge tent, which was lined with ermine and sable furs and waterproofed with tiger skins. By day, the emperor was in his vast howdah on his four elephants.

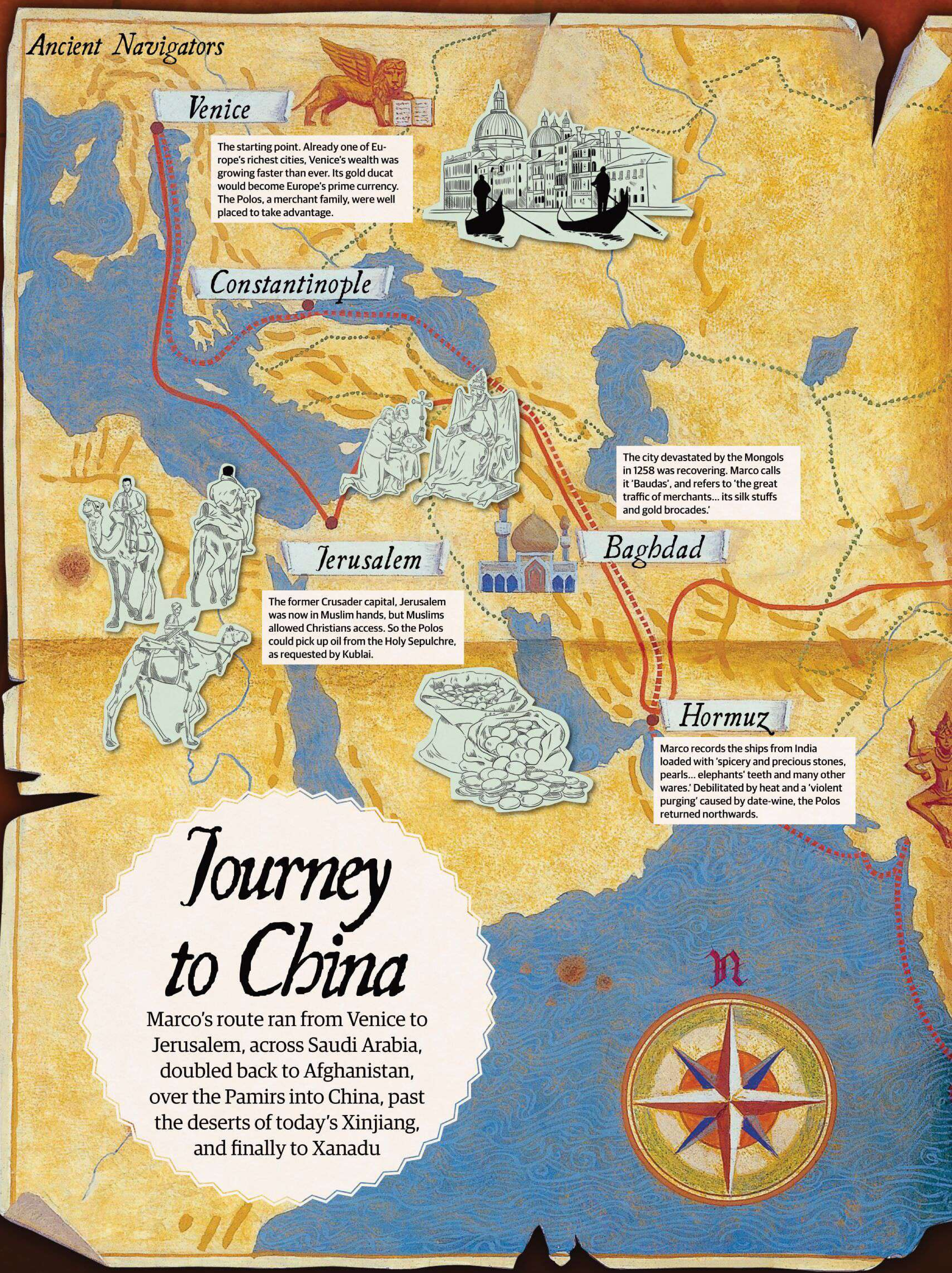
Marco described the scene: "And sometimes as they may be going along, the Emperor from his chamber is holding discourse with his barons, one of the latter shall exclaim: 'Sire! Look out for cranes!' then the Emperor instantly has the top of his chamber thrown open, and having marked the cranes, he casts one of his gyrfalcons."

For Marco, this life ended in 1292. Kublai was old, obese and in poor health. Marco, his father and uncle were nervous of their future under a new ruler. Kublai unwillingly allowed them to leave by sea as companions for a princess who was to be married to one of Kublai's relatives in Persia. They arrived home in 1296, two years after Kublai's death.

© Alamy, Joe Cummings, Sol 90 Images

Journey to China

Marco's route ran from Venice to Jerusalem, across Saudi Arabia, doubled back to Afghanistan, over the Pamirs into China, past the deserts of today's Xinjiang, and finally to Xanadu

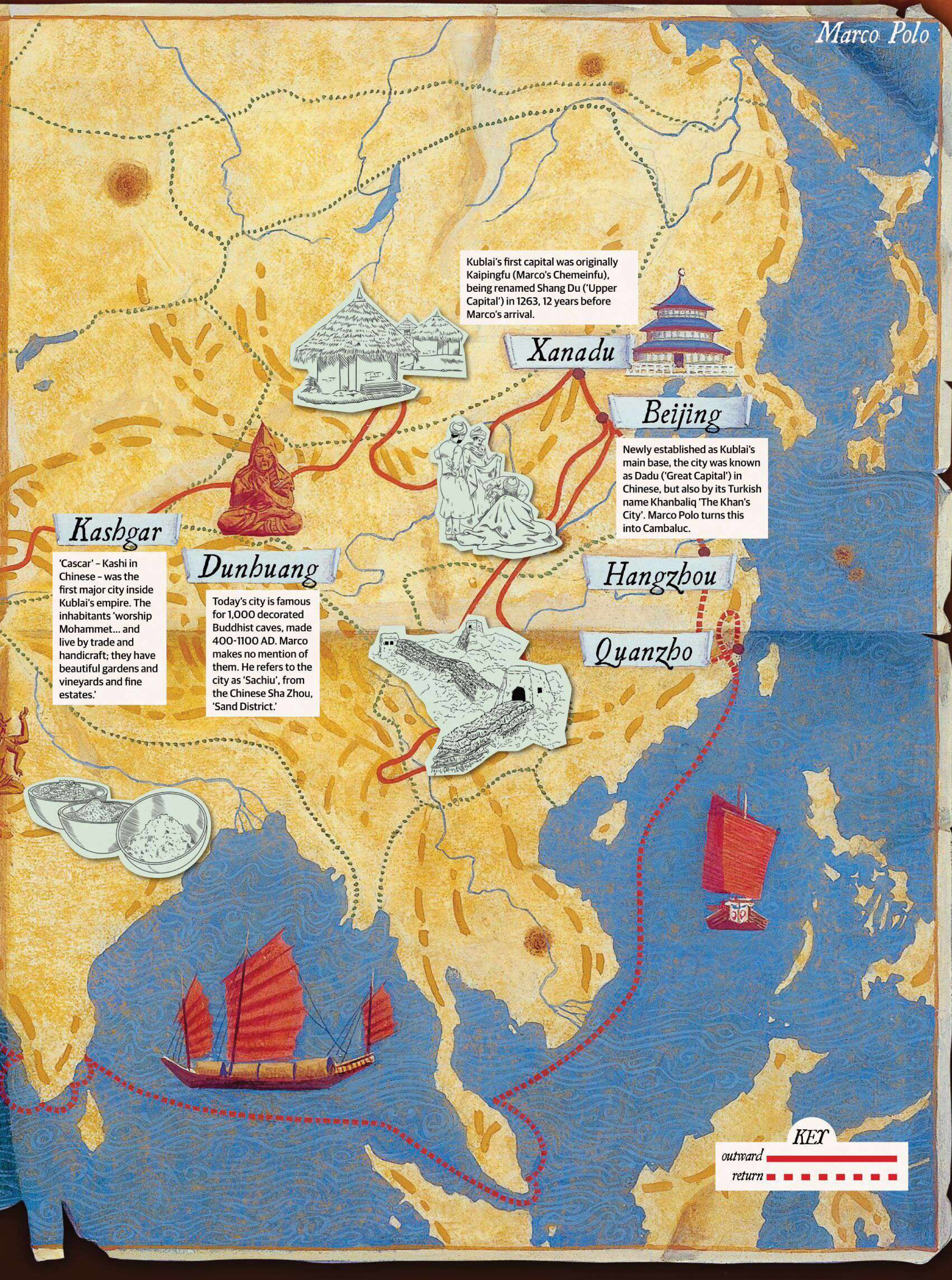


Venice The starting point. Already one of Europe's richest cities, Venice's wealth was growing faster than ever. Its gold ducat would become Europe's prime currency. The Polos, a merchant family, were well placed to take advantage.

Jerusalem The former Crusader capital, Jerusalem was now in Muslim hands, but Muslims allowed Christians access. So the Polos could pick up oil from the Holy Sepulchre, as requested by Kublai.

Baghdad The city devastated by the Mongols in 1258 was recovering. Marco calls it 'Baudas', and refers to 'the great traffic of merchants… its silk stuffs and gold brocades.'

Hormuz Marco records the ships from India loaded with 'spicery and precious stones, pearls… elephants' teeth and many other wares.' Debilitated by heat and a 'violent purging' caused by date-wine, the Polos returned northwards.



Kublai's first capital was originally Kaipingfu (Marco's Chemeinfu), being renamed Shang Du ('Upper Capital') in 1263, 12 years before Marco's arrival.

Newly established as Kublai's main base, the city was known as Dadu ('Great Capital') in Chinese, but also by its Turkish name Khanbaliq 'The Khan's City'. Marco Polo turns this into Cambaluc.

'Cascar' – Kashi in Chinese – was the first major city inside Kublai's empire. The inhabitants 'worship Mohammet… and live by trade and handicraft; they have beautiful gardens and vineyards and fine estates.'

Today's city is famous for 1,000 decorated Buddhist caves, made 400-1100 AD. Marco makes no mention of them. He refers to the city as 'Sachiu', from the Chinese Sha Zhou, 'Sand District.'

Day in the life

A SILK ROAD TRADER

Making money on the move along the ancient trade route, Taklamakan Desert, China, 629

Stretching from the East's opulent city of Chang'an, China, far beyond the horizon to Kashgar, then further west to India, Iran, Constantinople, Damascus and, ultimately, Rome, the Silk Road remains one of the greatest trade routes in history. Despite the name, silk made up only a small portion of the goods traded along the route, where magnificent caravans of merchants walked parched deserts and snow-capped mountains. Gemstones, precious metals, spices and incense were all staples of the trade route. Well-travelled sellers risked attack by bandits, the elements and even demons along their way.

WORSHIP YOUR CHOSEN GOD

Valuable goods were not all that was traded on the Silk Road. Religions and belief systems also travelled, and Buddhism, Judaism and Christianity, as well as Zoroastrianism, Manichaeism and Nestorianism, all expanded along the route. Each prescribed different methods of worship, and some travellers that met along the way would preach the virtues of their own beliefs.

Religion was central to life for many Silk Road traders, as seen in the Buddhist art at Mogao caves, Dunhuang

LOAD UP THE CAMELS

Success on the Silk Road meant trading goods bought cheaply in your home country with merchants from other lands, where your goods were rare and expensive. Before the caravan set off for the day, the animals would be loaded with the cargo. Rolls of silk, bags of spices and whichever other precious commodities were being transported were all hauled onto the animals' backs.

SEE OFF BANDIT ATTACKS

Bandits sought the precious cargo coursing through the route and, as such, many merchants carried weapons to defend themselves. Bronze weapons were often traded and so could also have been carried by the merchants themselves. The threat of attack meant that the route branched out across different roads of the main track over time, created in the hope of avoiding bandits.

This ninth-century fresco is from the walls of Bezeklik Thousand Buddha Caves, near Turfan, China

LEAVE YOUR MARK

Silk Road traders made their mark on the land as they travelled with different forms of art. Indo-European Sogdians carved rocks in Pakistan, travellers painted on cave walls in Mogao, and magnificent cave temples were built in Subei County. Many of these caves contained statues or paintings of Buddha, and the imagery was intricate and colourful.

FACE THE SAND DEMONS

Desert storms made an already inhospitable environment even more dangerous. Sand dunes were whipped into storms by high winds, making it impossible to see, so markers were set in the sand showing the direction of approach to avoid disorientation once the storm had ended. The sound of the wind was often thought to be famed desert demons that plagued unlucky travellers.

MERCHANTS' MEETING

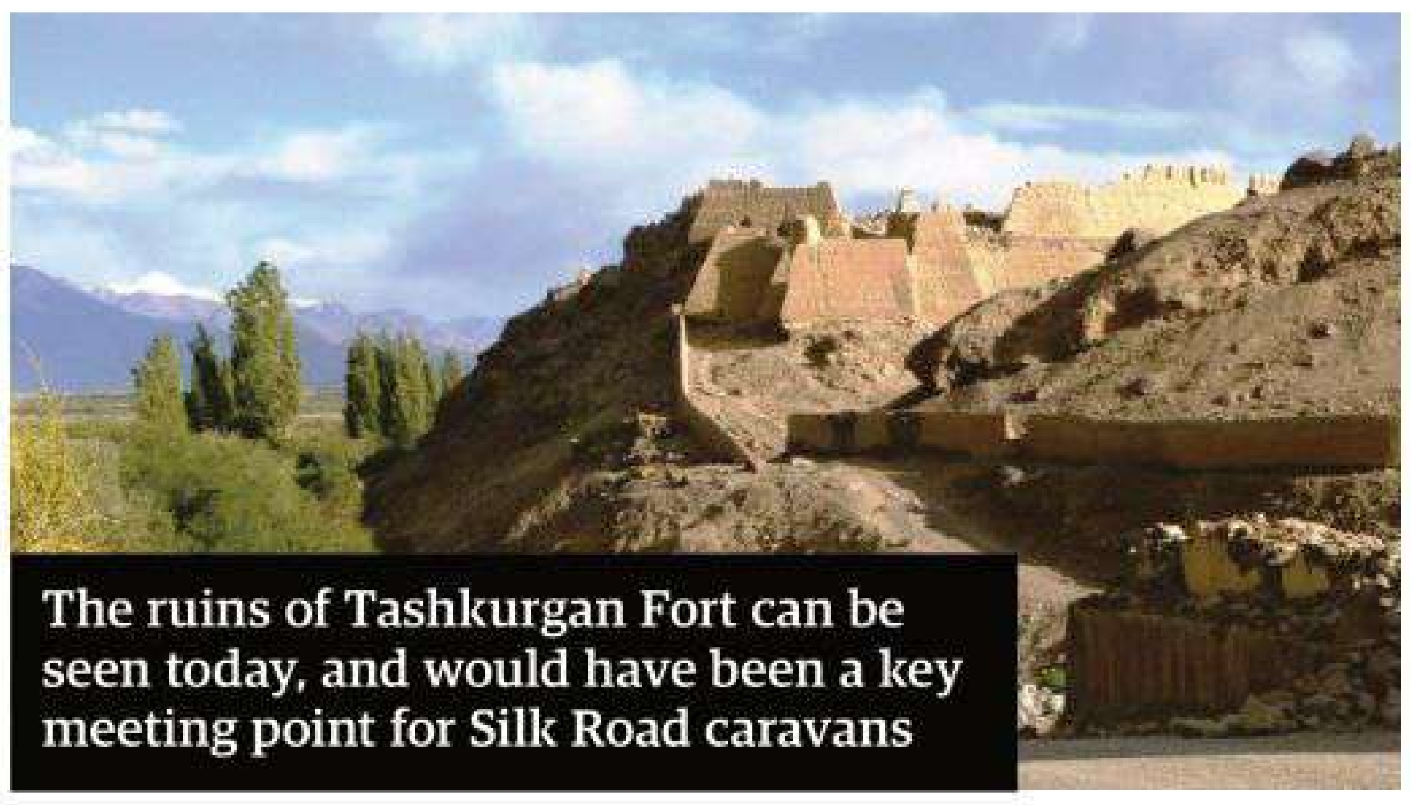
Throughout the desert were oasis towns like Dunhuang, home to Mogao caves, as well as landmarks like Tashkurgan's stone tower, providing places for groups of merchants to congregate - similar to modern service stations. Important information was exchanged here, like whether trades could be made with nearby groups, and any hazards to watch out for on the road ahead.

MAKE A SALE

Having heard at the meeting stop that a group travelling from the west may be willing to trade and are located nearby, the direction could be changed and a meeting arranged. The groups met in an open space, with the goods then placed between them for inspection. If the transaction was beneficial, goods were traded - silk might be exchanged for gold, silver and jewels.

TIME FOR BED

After a long day's travelling, a resting spot was picked and fires made to warm the caravan as they slept. Simple meals of meat and rice were eaten, and water, if in short supply, was rationed (the camels were last to drink, needing it less than their human leaders). The traders slept with half an eye on their cargo and their weapons in case of attack.



The ruins of Tashkurgan Fort can be seen today, and would have been a key meeting point for Silk Road caravans

© Corbis

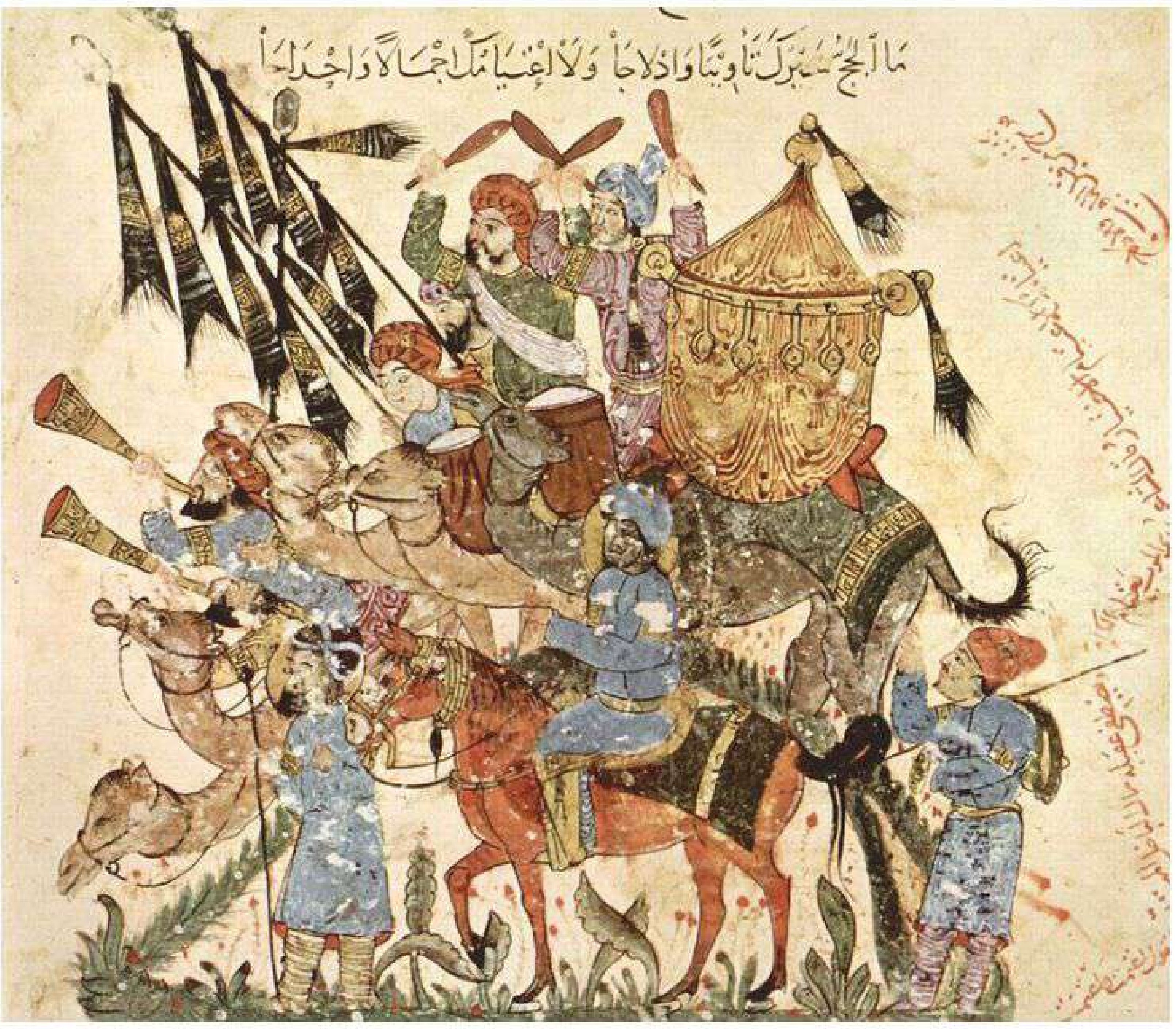
Muhammad Ibn Battuta

A Traveller Without Equal

For nearly 30 years, Ibn Battuta travelled much of the Islamic world during the early 14th century, leaving a captivating history of his journeys

For three decades, Abu Abdullah Muhammad Ibn Battuta travelled. His journeys crossed an estimated 173,000 kilometres from the North African coast to the holy cities of Mecca and Medina, the Indian subcontinent, and the vastness of China. Across trackless deserts, towering mountain peaks, and roiling seas, this son of Islam accomplished perhaps the longest sustained voyage of discovery in the history of exploration.

The son of a well-to-do Berber family, Ibn Battuta was born in Tangier, Morocco, in 1304, as the Islamic religion was spreading throughout the Mediterranean Basin and sub-Saharan Africa and across Central Asia to the Orient. Educated in the family tradition as an authority in Islamic law and apparently possessed of the personal wealth to finance at least his initial *hajj*, or pilgrimage, to Mecca, young Ibn Battuta left home in the year 1325. He would not set foot back in Tangier for nearly a quarter century.



Left: This 13th century illustration depicts Muslim pilgrims on their journey, or hajj, to the holy city of Mecca in Arabia

ABU ABDULLAH MUHAMMAD IBN BATTUTA

1304-c.1369

Brief Bio

Ibn Battuta travelled thousands of kilometres across the Muslim world and provided a glimpse of early 14th century society from West Africa to the Orient. The record of his adventures, simply referred to as *Rihla*, or *Travels*, spans more than a quarter century of exploration from deserts to oceans, high mountains to jungle.

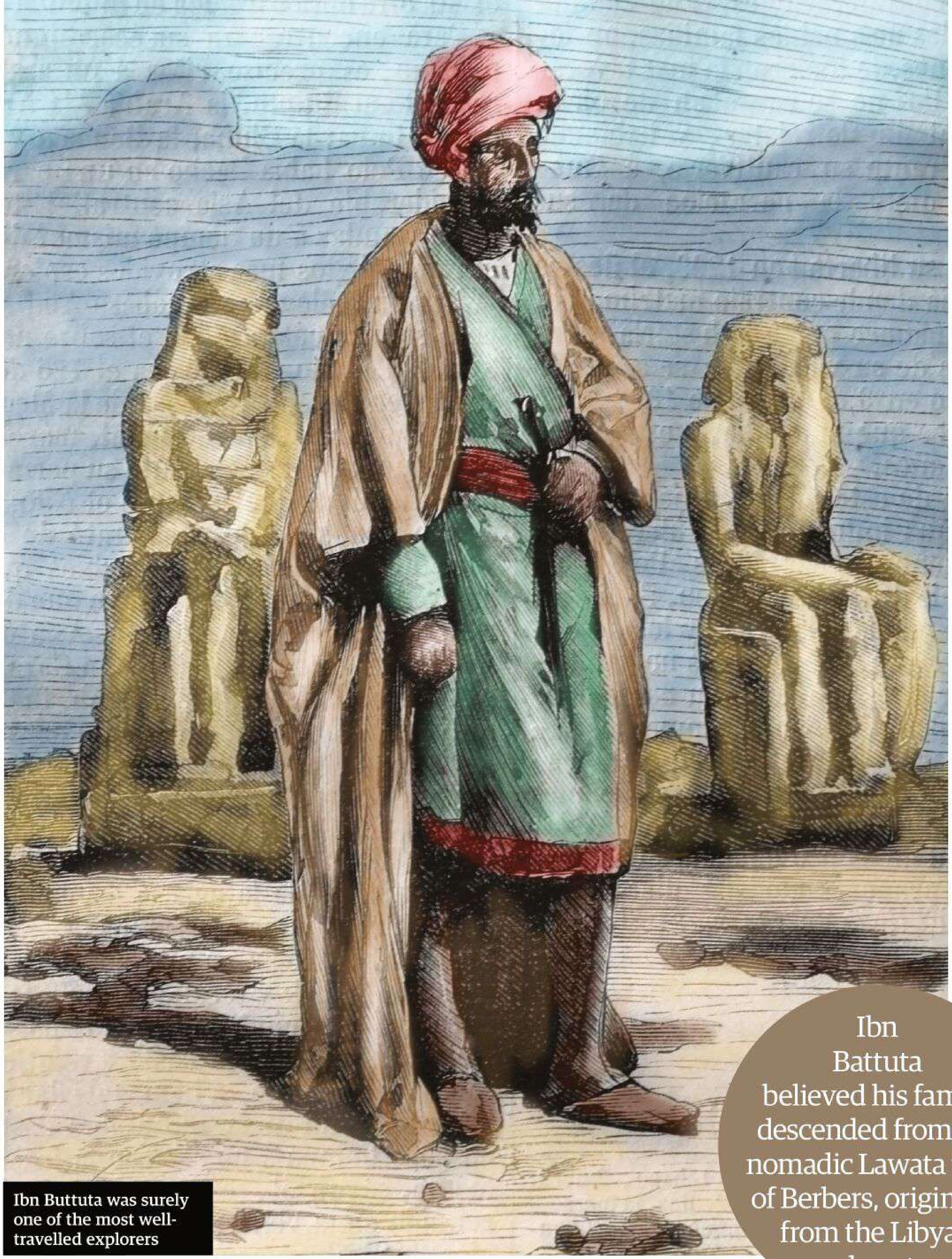
Timeline

1325

First departure from Tangier
Setting out on his first *hajj* to Mecca, young Ibn Battuta leaves his home in Morocco for the first time in his life. He does not return to Tangier for nearly 25 years. **1325**

Across North Africa
Ibn Battuta's trek across North Africa includes a two-month stay in Tunis. Prior to joining a caravan, he is said to have married in the town of Sfax on the Mediterranean. **1326**

Foretelling the future
Arriving at the port city of Alexandria in Egypt, Ibn Battuta encounters two men who foretell the future. The first, Sheikh Burhanuddin, reveals, "It seems to me that you are fond of foreign travel. You will visit my brother Fariduddin in India, Rukonuddin in Sind, and Burhanuddin in China. Convey my greetings to them." As he sleeps, Ibn Battuta sees himself placed on the wings of a great bird, which then flies toward Mecca, Yemen, and numerous mysterious regions. Sheikh Murshidi interprets the dream, telling the young pilgrim that it is his destiny to travel throughout the known Islamic world. **1326**



Ibn Buttuta was surely one of the most well-travelled explorers

> Ibn Battuta believed his family descended from the nomadic Lawata tribe of Berbers, originally from the Libyan desert

Although there was understandably sadness and parental concern for the young man's welfare, he set out on a fantastic journey and later remembered his resolute desire to travel; "I left Tangier, my birthplace, on Thursday 2 Rajab, 725 (the seventh month of the Hajiri, or Islamic, calendar), with the intention of going on pilgrimage to Mecca," Ibn Battuta wrote. "I set out alone, having neither fellow traveller in whose companionship I might find cheer, nor caravan whose part I might join, but swayed by an overmastering impulse within me and a desire long cherished in my bosom to visit these illustrious sanctuaries. So I braced my resolution to quit my dear ones, female and male, and forsook my home as birds forsake their nests. My parents being yet in the bonds of life, it weighed sorely upon me to part from them, and both they and I were afflicted with sorrow at this separation."

He never saw his father or mother alive again.

The pilgrimage to Mecca was typically 16 months in duration; however, Ibn Battuta lingered for two months in the city of Tunis and then joined a caravan for security against bands of nomadic robbers. When he reached the port city of Alexandria, Egypt, the young man encountered a pair of mystics. These men saw clearly that Ibn Battuta was destined to become a world traveller.

At the city of Aydhab on the Red Sea, civil unrest prevented Ibn Battuta from crossing to the Arabian Peninsula, and the first of many detours occurred when the journey was rerouted through Syria and Palestine. Along the way, he visited Jerusalem, Bethlehem, and Damascus. After a month in the Syrian capital, he continued south to Medina and the tomb of the Prophet Muhammad and eventually reached Mecca.

When his required pilgrimage was completed, Ibn Battuta remained a month in Mecca. In the autumn of 1326, rather than turning toward home, he headed east toward Persia and Iraq. In the city of Najaf, he left the protection of a caravan bound for Baghdad. Six months later, he had travelled along the Tigris River to Basra near the Persian Gulf. By the following summer, he reached Baghdad and joined a royal caravan along the Silk Road to Tabriz in present-day northern Iran. His travels took him to Mosul in modern-day Iraq and across the Turkish frontier.

Sometime from 1328-1330, Ibn Battuta returned to Mecca and then journeyed to Jeddah on the Red Sea, setting sail for the ports of southern Arabia and the horn of Africa. From Mogadishu, a prosperous trade centre, he ventured to the coast of Tanzania, where he described the island city of Kilwa as "one of the finest and most beautifully built towns."

Ibn Battuta then returned to Mecca for the third time, traversing the Strait of Hormuz and the Persian Gulf. By 1332, he was apparently intrigued by stories of the grandeur of the East and embarked on a lengthy journey to India. Following the Nile Valley toward the Mediterranean, he reached Cairo and turned north east through Palestine, stopping in several cities previously visited along the way.

Egypt left a lasting impression on the traveller. Of Cairo, he wrote, "There you find them all, the great scholars and the ignorant men of stature, and frivolous men, the gentle and those short-tempered, those with great fame, and those totally ignored. The city's population is so high that their movements remind me of the waves of the sea... Although an old city, it still remains youthful."

Arrival in Medina
After travelling through Jerusalem and Bethlehem in Palestine, Ibn Battuta reaches Damascus and then journeys 1,300 kilometres to the holy city of Medina, where the tomb of the Prophet Muhammad is located. **1326**

To Iraq and Persia
Rather than returning to Tangier after his first hajj to Mecca, Ibn Battuta turns east toward Iraq and Persia, visiting Baghdad and following the infamous Silk Road. **1327**

Venturing south in Arabia
Following the completion of his second *hajj* to Mecca, Ibn Battuta reached the port of Jeddah on the Red Sea, then sailed to Aden and may have visited Sana'a in modern Yemen. **1330**

The Horn of Africa
Mogadishu, a sprawling centre of trade described by Ibn Battuta as "an exceedingly large city," bustles as the traveller is amazed at the vigorous buying and selling of expensive goods from other lands. **1331**

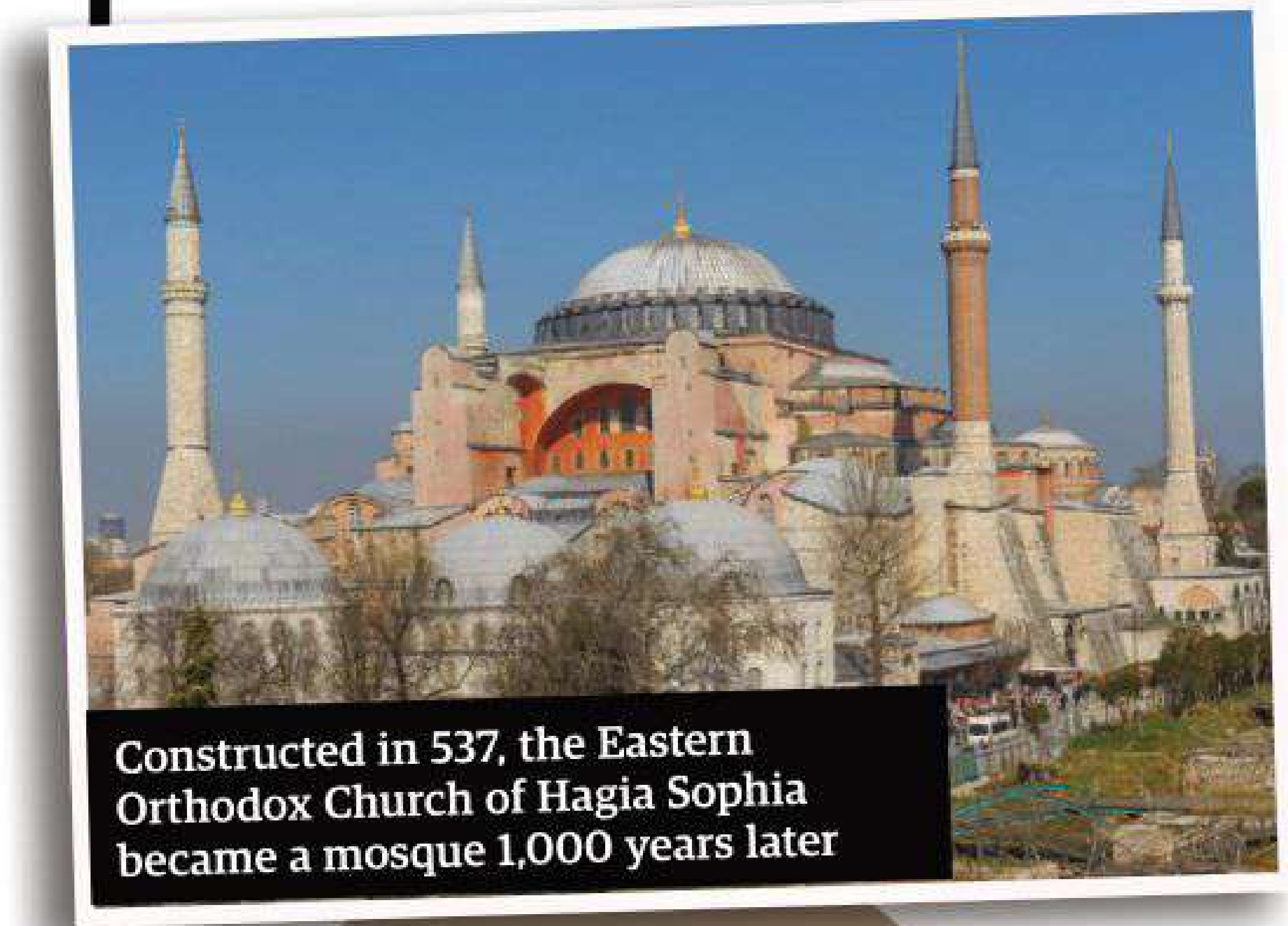
Overland to India
Deciding to seek an opportunity to serve the court of the Sultan of Delhi, Ibn Battuta embarks on an arduous overland trek to the subcontinent. He travels through Egypt and into modern-day Turkey. **1332**

A Muslim in Constantinople

Sometime between 1332 and 1334, Ibn Battuta spent at least a month in Constantinople, capital of the Byzantine Empire. After escorting the pregnant daughter of Emperor Andronicus III Palaeologus during the three-week trek from Astrakhan on the Volga River, Ibn Battuta was welcomed in the city as an honoured guest.

He related, "We first visited the great church of Hagia Sophia that I had heard so much about. From the outside, the building was beautiful. The ornate architecture was astonishing, as was the immense dome atop the structure. I toured the beautiful grounds of the building, but upon going inside I was informed that I must kneel to the cross before entering. Of course, being a Muslim, I refused to undertake this gesture, and I was not allowed entrance."

Ibn Battuta also attended a chariot race at the city's hippodrome but was vastly more interested in the architecture that surrounded him and the design of the venue than the actual competition he witnessed. The large number of Christian nuns and convents in the city fascinated him. In his discussions with several monks, he discovered that they were, "kindred spirits in that we both had a thirst for knowledge. We debated on and on about religion, morality, and philosophy."



Constructed in 537, the Eastern Orthodox Church of Hagia Sophia became a mosque 1,000 years later

Ibn Battuta kept few records, if any, while on his journeys and dictated the famed book *Rihla* from memory

The old city of Sana'a, Yemen retains its ancient character. Scholars debate whether Ibn Battuta visited the city.

In addition to his legal training, Ibn Battuta was also recognised as an accomplished botanist

As he crossed into Asia Minor, the cities of eastern and central Turkey were on Ibn Battuta's route. He brushed the shore of the Black Sea and visited the Crimean Peninsula before travelling into the south west reaches of the famed Golden Horde, the great dominion of the Mongols in south-central Asia. He is said to have travelled with the royal court of Öz Beg Khan and reached the Caspian Sea at the port of Astrakhan near the mouth of the River Volga. Scholars actually debate the assertion that he travelled so far north.

The great city of Constantinople, capital of the Byzantine Empire and crossroads of East and West, beckoned Ibn Battuta. Around 1333, he learned that Öz Beg Khan's wife, the daughter of Byzantine Emperor Andronicus III Palaeologus, was pregnant and would be allowed to return to her home to give birth. Ibn Battuta joined the caravan and ventured outside the Muslim world for the first time in his life. Returning to Öz Beg Khan, the explorer described the marvels he had seen to the Mongol ruler and then departed.

Travelling through present-day Tajikistan, Uzbekistan, and Afghanistan, Ibn Battuta gazed on the treacherous peaks of the Hindu Kush, making the arduous trek through mountain passes. He recalled, "I proceeded… in the road to which is a high mountain, covered with snow and exceedingly cold. They call it Hindu Kush, that is Hindu slayer, because most of the slaves brought from India die on account of the intense cold."

In Delhi, Ibn Battuta gained the patronage of the wealthy Sultan Muhammad bin Tughluq and served two years as a judge of the local Islamic court. However, the sultan was known for his

"The splendour of China and its strange… culture fascinated Ibn Battuta"

1333

ضريح
ابن بطوطة
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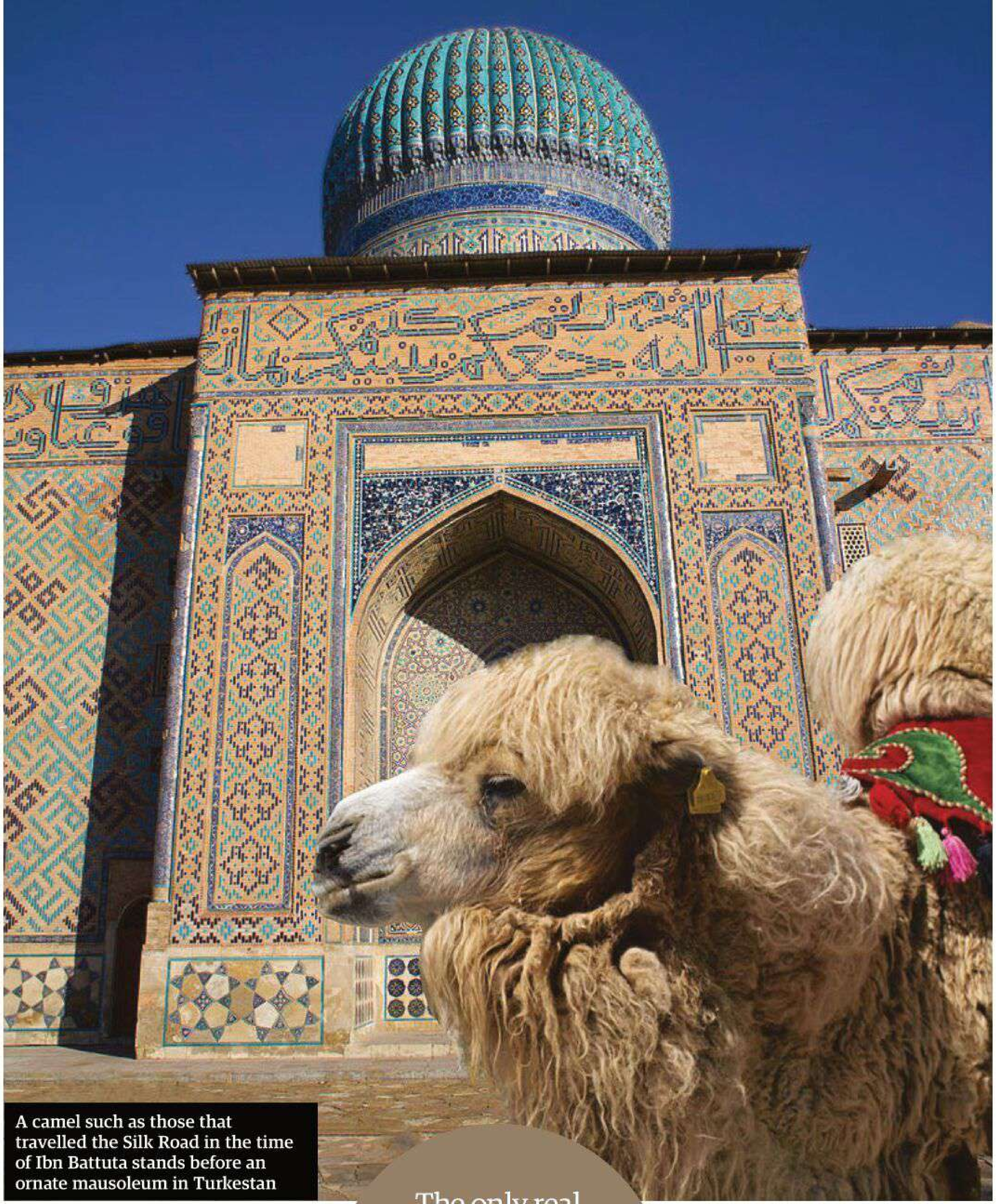
Ibn Battouta

A brush with Europe
Sailing north, Ibn Battuta reaches the Crimean Peninsula on the Black Sea and ventures as far as the city of Bolghar in present-day Bulgaria. Some scholars assert that this is the northern limit of his journeys. He meets with representatives of Öz Beg Khan, ruler of the vast Mongol Golden Horde. He returns with the Kahn to the city of Astrakhan in the delta of the River Volga. **1333**

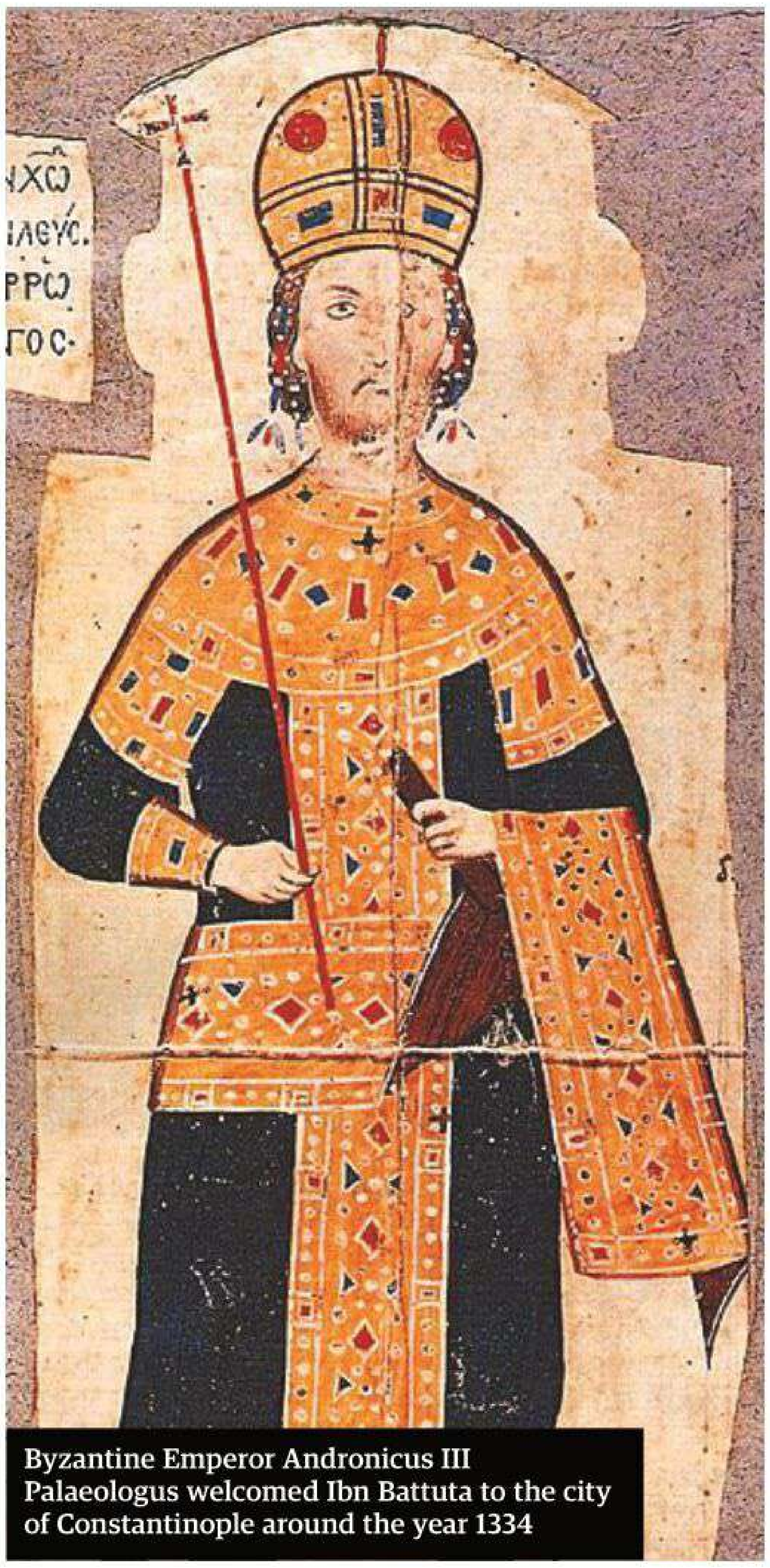
Possible northern reach
Ibn Battuta gazes north from the city of Bolghar and considers venturing north into a "dark" land that he believes is covered with snow and ice and passable only by dog sled. **1334**

To Christian Constantinople
Arriving in Constantinople, Ibn Battuta experiences culture outside the Islamic world for the first time and concludes that he and Christian scholars he meets share a common quest for knowledge. **1334**

Service to the Delhi Sultan
Sultan Muhammad bin Tughluq welcomes Ibn Battuta to Delhi and installs him as a judge in the Islamic court. However, the newcomer finds enforcement of Islamic law difficult due to cultural differences. **1334**



A camel such as those that travelled the Silk Road in the time of Ibn Battuta stands before an ornate mausoleum in Turkestan



Byzantine Emperor Andronicus III Palaeologus welcomed Ibn Battuta to the city of Constantinople around the year 1334

unpredictable behaviour. For several years, Ibn Battuta fell in and out of favour with him. Finally, after numerous attempts to leave, he took advantage of an opportunity to serve as ambassador to Yuan Dynasty of China.

The voyage to China was fraught with difficulty, and Ibn Battuta did not arrive at Quanzhou on the coast of the South China Sea until 1345. Along the way, he visited the island of Sumatra, the Malay Peninsula, and the interior of Southeast Asia in present-day Vietnam. The splendour of China and its strange but alluring culture fascinated Ibn Battuta. He was particularly impressed with fine Chinese silk fabrics, exotic cuisine, and high-quality porcelain, which he mistakenly believed was made from coal.

> The only real information we have on the life of Ibn Battuta is contained in the famed record of his travels, *Rihla*

Ibn Battuta travelled extensively in China, from the heavily populated coastal city of Hangzhou to Beijing, where he presented himself as the ambassador of the court at Delhi to Emperor Toghon Temür. He travelled the waters of the Grand Canal, linking the great Yangtze and Yellow Rivers. He returned to Quanzhou in 1346 and departed for Mecca. The journey was difficult, but Ibn Battuta decided against a detour to Delhi, concerned that Tughlug would once again see fit to detain him.

Once in Mecca, he decided at last to return to Morocco. The trek from China had taken three years, and when Ibn Battuta reached Tangier in 1349, the Black Death was raging in Europe and North Africa. Within the year, the restless wanderer was on the road again - to Gibraltar and Granada in Spain. From 1351-1354 he ventured across the barren Sahara Desert to the Mali Empire, following the Niger River and travelling by camel to the fabled city of Timbuktu. In the autumn of 1353, the explorer began his final journey, back to Morocco, where he arrived early in 1354.

Ibn Battuta then recounted his adventures to Ibn Juzayy, a trusted scribe and scholar. Centuries of study have led some experts to conclude that portions of the finished work, titled *A Gift To Those Who Contemplate The Wonders Of Cities And The Marvels Of Traveling*, or simply *Rihla* (Travels), were borrowed from accounts of others' travels. Nevertheless, it remains a seminal record of life in the Islamic world and beyond in the 14th century.

During his last years, the great traveller Ibn Battuta was again appointed an Islamic law judge in Morocco. He died circa 1369.

1369

Escape from India
After years in and out of favour with the Sultan of Delhi, Ibn Battuta embarks for China as an ambassador. He nearly loses his life in the raging Indian Ocean as his small boat is buffeted by winds off Ceylon and spends nine months in the Maldives Islands. He visits Southeast Asia, including present-day Vietnam, the island of Sumatra, Malacca, and the Malay Peninsula. **1341**

To Chinese shores
Ibn Battuta makes landfall at Quanzhou on the South China Sea and travels to large cities, including Hangzhou and Beijing. He learns of the Great Wall and admires the Eastern culture. **1345**

Return to Tangier
After nearly a quarter century, Ibn Battuta returns to Morocco. Both his parents have died, and he undertakes voyages to Spain and later across the Sahara Desert to the kingdom of Mali. **1349**

Dictating *A Story Of Discovery*
Ibn Battuta dictates from memory the fantastic story of his journeys across the Muslim world and to the fringes of Christendom, resulting in the great work known simply as *Rihla*. He dies circa 1369. **1354**

The Seven Voyages of the Chinese Treasure Ships
In the early-15th century, China expanded its influence and established itself as a world power with what went down in history as the 'seven voyages of the Chinese treasure ships'. From Java to Calcutta and even as far as eastern Africa, commander Zheng He forged new trade routes and brought back ships loaded with exotic goods and tributes.

Giants of the sea
Compared with the vast majority of other sailing ships from the era, the Chinese treasure ships dwarfed them. Indeed, reports from the time indicate that some of these massive junks weighed over 2,000 tons and could accommodate up to 1,000 men.

Big fleet, big crew
Commander Zheng He's treasure-hunting fleet is reported to have been 300 ships strong, with at least 62 of that number dedicated treasure ships. As the fleet travelled extensively, these vessels played host to navigators, sailors, doctors, manual labourers and soldiers, among other workers.

Route on the Yangtze
The majority of the fleet's awesome treasure ships were built in dockyards at the former capital Nanjing on the Yangtze River. From here they sailed downriver to the Yellow Sea (the northern part of the East China Sea) before joining the larger fleet. Records show that many were eventually deconstructed at Nanjing too.

Seven Voyages of the Chinese Treasure Fleet

China, 1405-1433

The first of seven daring maritime journeys for the Chinese Treasure Fleet got underway in 1405. From this first expedition to the fleet's final trip in 1431, these voyages – led by explorer Zheng He – would expand the influence of the Chinese empire throughout the world from Indonesia to Africa.

The fleet was commissioned in 1403 by Emperor Chengzu, who appointed the eunuch Zheng He as its leader. Zheng He was an imposing captain at 1.8 metres (six foot) tall who, after being taken prisoner at the age of ten, had gained the favour of the emperor with distinguished military service. As a trusted advisor, he was given the responsibility of charting a new trade route that would make overland journeys obsolete. The second major goal was to consolidate China's status as a formidable power in Arabia and eastern Africa.

Much as Zheng He's height made him an imposing figure, the ships he commanded made even more of an impression. The largest vessels measured roughly 71 metres (233 feet) – though some argue they were even longer at 137 metres (450 feet) – and carried a crew of several hundred.

The fleet would sail first to what is now Vietnam, then to Java, Malacca, Sumatra, the Andaman and Nicobar Islands, Ceylon, Calcutta, and back to China. The maiden journey was not without difficulties, as Zheng He was forced to turn the fleet around at Ceylon when he realised they were not welcome. On the voyage home he battled with the feared pirate Chen Zuyi at Palembang in Indonesia. Zuyi would become part of the bountiful haul, and the ships also carried a number of foreign envoys from the lands they had visited.

The fleet set sail to return the envoys two years later. Upon getting back in 1409 he was dispatched directly to replicate the first two-year journey. They would have two years to rest before an even more demanding journey was planned for 1413.

For the fourth voyage the fleet would travel to the Arabian Peninsula and on to Africa. Stopping at Hormuz, Aden, Muscat, Mogadishu and Malindi, the fleet would bring home previously unheard-of treasures, including giraffes. The emperor commanded Zheng He to repeat the voyage twice more, with other stops pulled in along the way.

While the fleet was at sea, the emperor's war with the Mongols took him on the campaign trail where he died. For all the good that the fleet had done, Zheng He's journeys were very costly and it was decided by the new Hongxi Emperor that the voyages must stop. However, when his son came to power, one last epic expedition was organised.

By 1429 Zheng He was ailing. The seventh voyage in 1431 would take three years and dock in 17 ports; there is even reason to believe he beat later European ships to sailing around Africa's Cape of Good Hope. This journey would be Zheng He's last, as the commander died on the return journey and was laid to rest at sea. Under his leadership, the Fleet had not only plotted new trade routes but established China as a force to be reckoned with.

Types of ship

LEADER ZHENG HE
DESTINATION INDIA
MISSION TRADE

TREASURE SHIP

CREW: ~1,000

Perhaps measuring as much as 137m (450ft) long and 55m (180ft) wide, the treasure ships were designed to carry a lot of cargo and impress any who laid their eyes on them.

Strength Could transport a huge amount of freight and people
Weakness Not very manoeuvrable

MACHUAN

CREW: ~100

The machuan were approximately two-thirds the size of the larger treasure ships and were designed for carrying horses, repair equipment and additional tributes.

Strengths Could lead the fleet and conduct repairs
Weakness Unsuitable for battle

ZHANCHUAN

CREW: ~75

With smaller ships for rice and troops, the smallest were the nippy zhanchuan, which were designed for battle. These measured in at about 50m (165ft) long.

Strengths Highly manoeuvrable and could defend the fleet
Weakness Small capacity

01 Calcutta

Calcutta, India, was one of the biggest trading hubs in Asia at the time and was the final stop for Zheng He on the first voyage. This would have been a vital port, especially as they had just been forced to leave Ceylon. The dual mission purposes of profitable trade and establishing China as a force to be reckoned with would have really come to the fore here as Zheng He would have had something to prove. It is believed the treasure ships spent a good deal of time here before heading back to China laden with valuable goods and foreign ambassadors.

10 CAPE OF GOOD HOPE

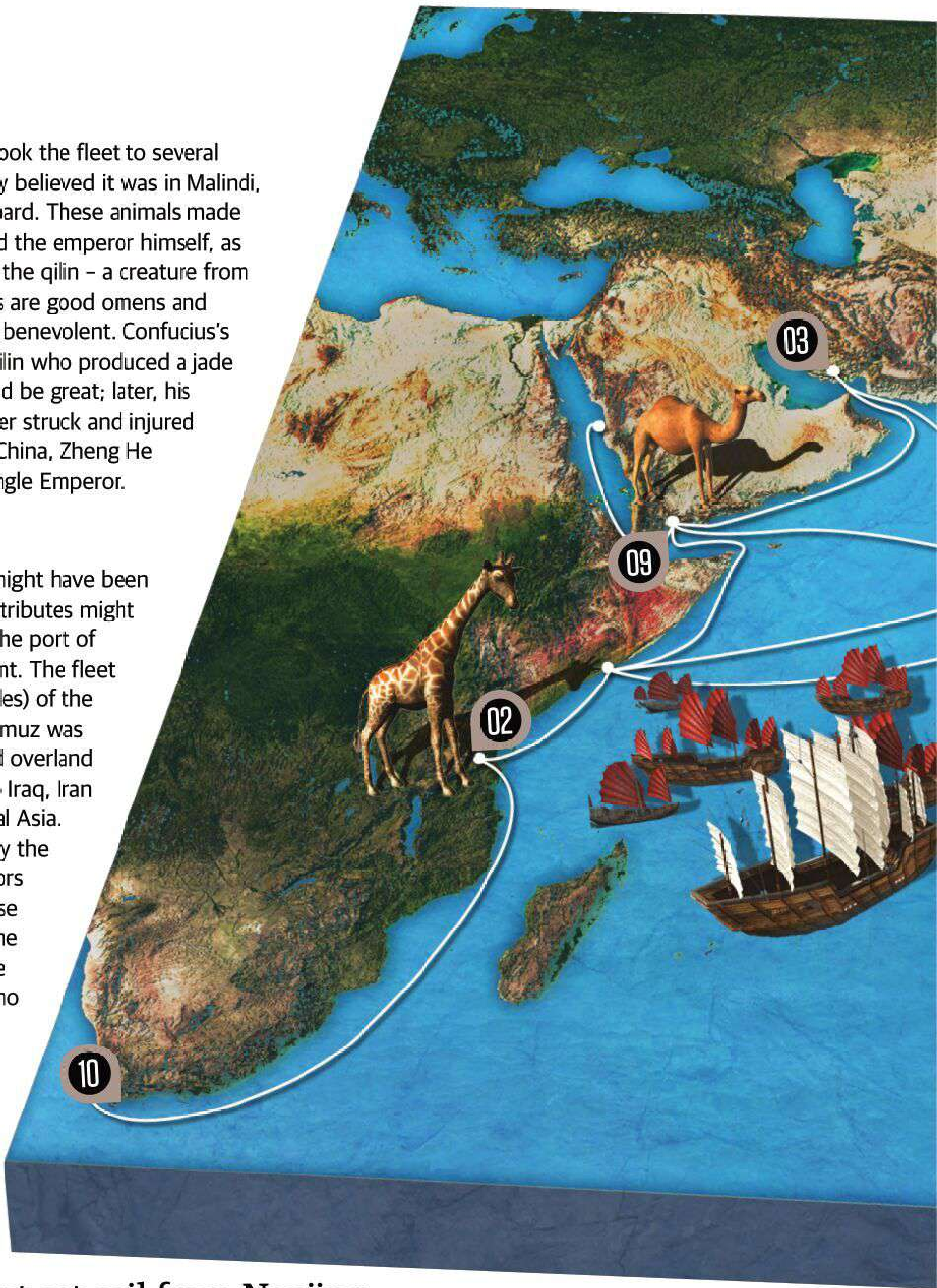
Although it has not been verified for certain, the Venetian cartographer Frau Mauro reported that Zheng He and the Treasure Fleet actually rounded the Cape of Good Hope on their final voyage in 1433. If this is true, then the Chinese accomplished this years before any European ship would.

02 Malindi

Zheng He's later voyages took the fleet to several ports in east Africa, but it's generally believed it was in Malindi, Kenya, that they took giraffes on board. These animals made a huge impression on the sailors and the emperor himself, as they bore a striking resemblance to the qilin – a creature from Chinese mythology. These creatures are good omens and indicated that the current ruler was benevolent. Confucius's pregnant mother was visited by a qilin who produced a jade tablet telling her that her child would be great; later, his death was foretold when a charioteer struck and injured a qilin. By bringing giraffes back to China, Zheng He reaffirmed the popularity of the Yongle Emperor.

03 Hormuz

While the most profitable harbour might have been Calcutta, and while the most exotic tributes might have been found in eastern Africa, the port of Hormuz was still extremely important. The fleet crossed 2,250 kilometres (1,400 miles) of the Arabian Sea to reach it because Hormuz was the gateway to the Persian Gulf, and overland trading routes connected the city to Iraq, Iran and many other cities around Central Asia. The Treasure Fleet was welcomed by the merchants and traders, and the sailors noted the remarkable wealth of those who came to barter there. One of the biggest points of trade in the Middle East, the great and powerful made no secret of their status to their rivals.



04 NANJING

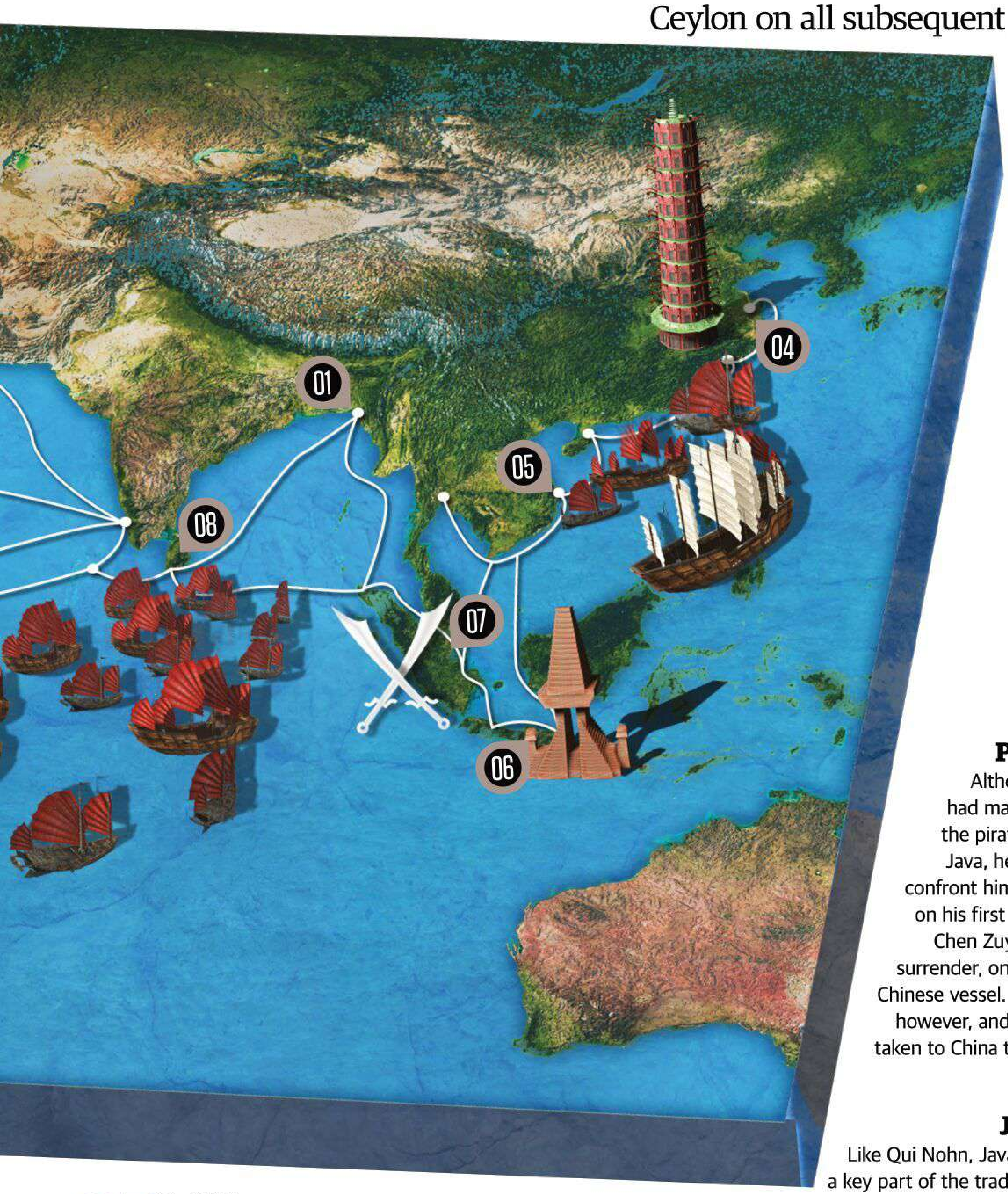
The Treasure Fleet first set sail from Nanjing on 11 July 1405 and would return two years later. At the time Nanjing was one of the largest cities on the planet and the Yongle Emperor was determined that the rest of the world should acknowledge China's status.

09 Aden

The ancient city of Aden in Yemen sits in the crater of a long-dormant volcano, and provided China with a much-needed military ally. The city was important because it was located on the trade route between Europe and India. In fact, it was so highly regarded by the Chinese that Emperor Chengzu sent two special envoys to accompany Zheng He on his first visit there.

08 CEYLON

Diplomacy failed when Zheng He first visited Ceylon (now Sri Lanka) in 1405 and was turned away by the hostile General Alakeshwara. On the third voyage, however, Zheng He was prepared and beat the general. With Alakeshwara humiliated, the fleet stopped at Ceylon on all subsequent journeys.



07 Palembang

Although Zheng He had managed to avoid the pirate Chen Zuyi at Java, he was forced to confront him at Palembang on his first return journey. Chen Zuyi pretended to surrender, only to board the Chinese vessel. His plan failed, however, and the pirate was taken to China to be executed.

Java 06

Like Qui Nohn, Java was a key part of the trade route. Having previously focused on agriculture, the Majapahit Empire had turned its attention to trade, creating an incredibly prosperous harbour. Zheng He's fleet arrived at a time of political turmoil but established itself as an important part of the power structure.

05 Qui Nhon

The first stop for the Treasure Fleet was Vijaya, the capital of Champa near what we now know as Qui Nhon in Vietnam. Champa was a centre of trade in the region, dealing with both Arab and Indo-Chinese ships as part of the spice route. It was a regular port-of-call for Zheng He.

Key figures

ZHENG HE EXPLORER

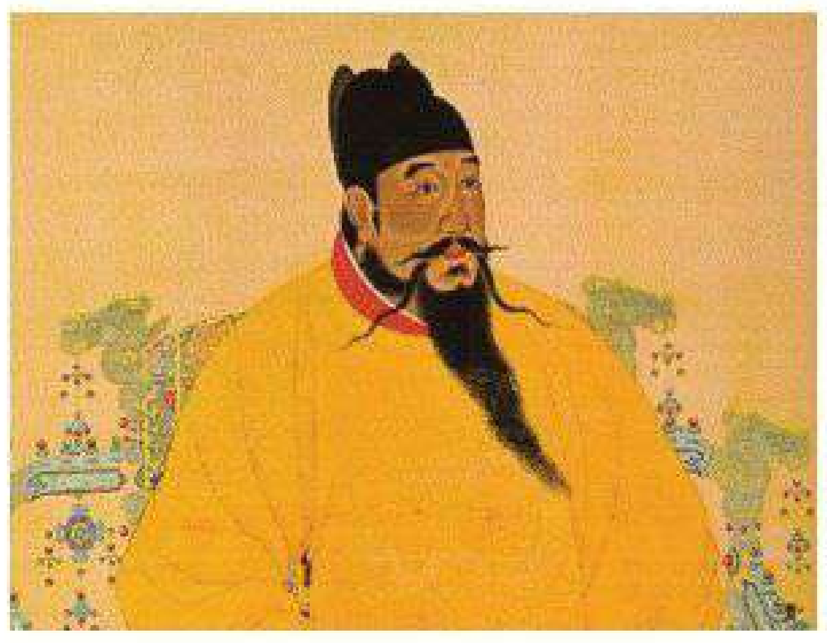
ZHU DI EMPEROR

CHEN ZUYI PIRATE

ZHENG HE

1371-1433

Born into a Persian family, Zheng He was captured in the Ming conquest aged ten. He was castrated and sent into the service of Prince Zhu Di, who would become the Yongle Emperor. Zheng He proved himself in the military and became one of Zhu Di's closest advisors.



YONGLE EMPEROR

1360-1424

Born Zhu Di, his path to power was not easy, fighting rumours and attacks before he violently usurped power from the Jianwen Emperor. He reconstructed China and relocated the capital to Beijing, giving his reign the name 'Yongle', which means perpetual happiness.

CHEN ZUYI

UNKNOWN-1407

Chen Zuyi was one of South-east Asia's most feared pirates, roaming the Strait of Malacca from Penang. Even the Ming armada had fallen foul of his raids. Zheng He issued a challenge to Chen, hoping to draw him into an open fight; accepting it proved to be the pirate's downfall.

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Age of Discovery

Delve into the amazing and harrowing voyages that opened up the world to European domination

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Discover how Prince Henry kick-started the Age of Discovery

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Instrumental in defining the New World, did he rule with an iron fist?

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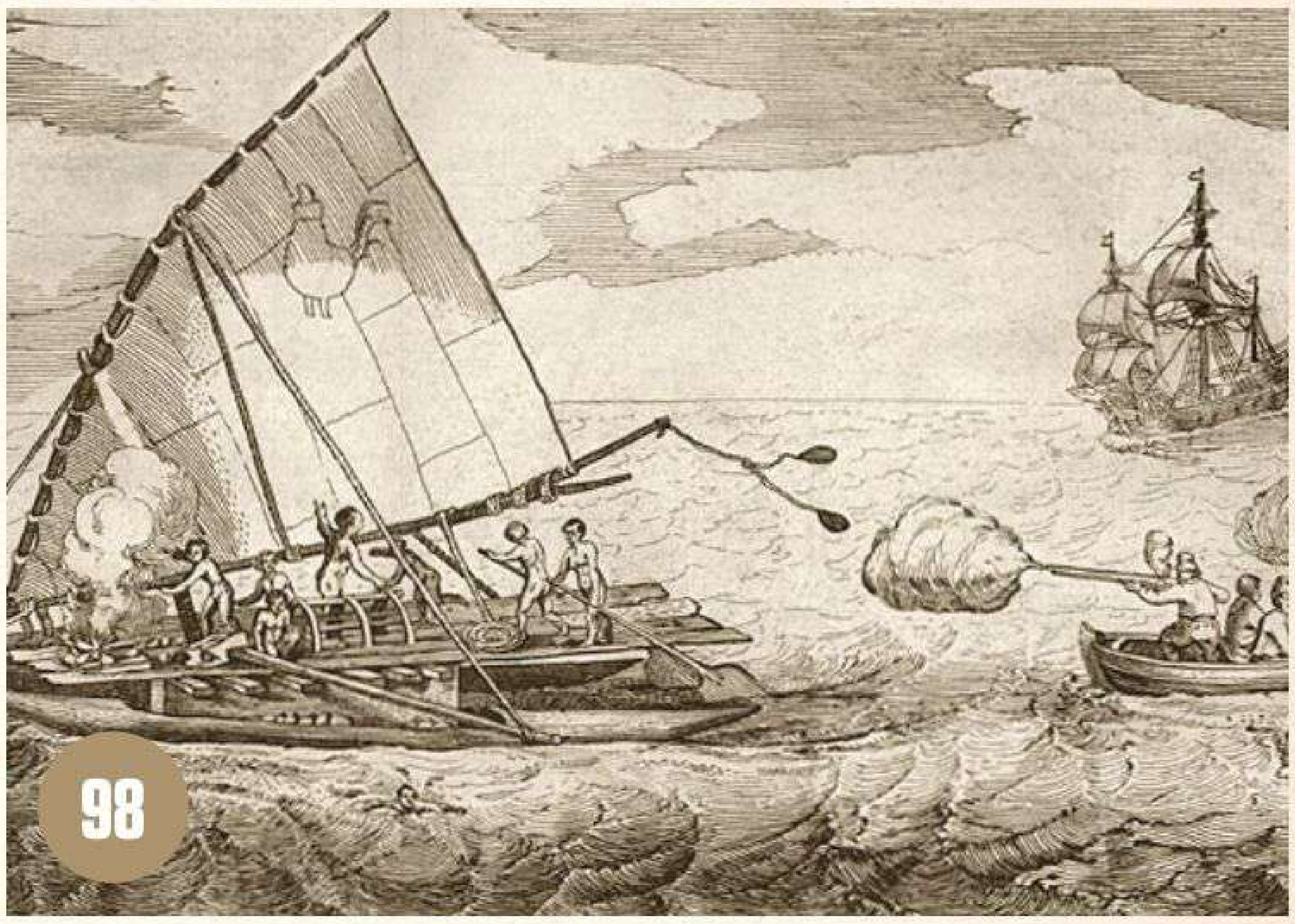

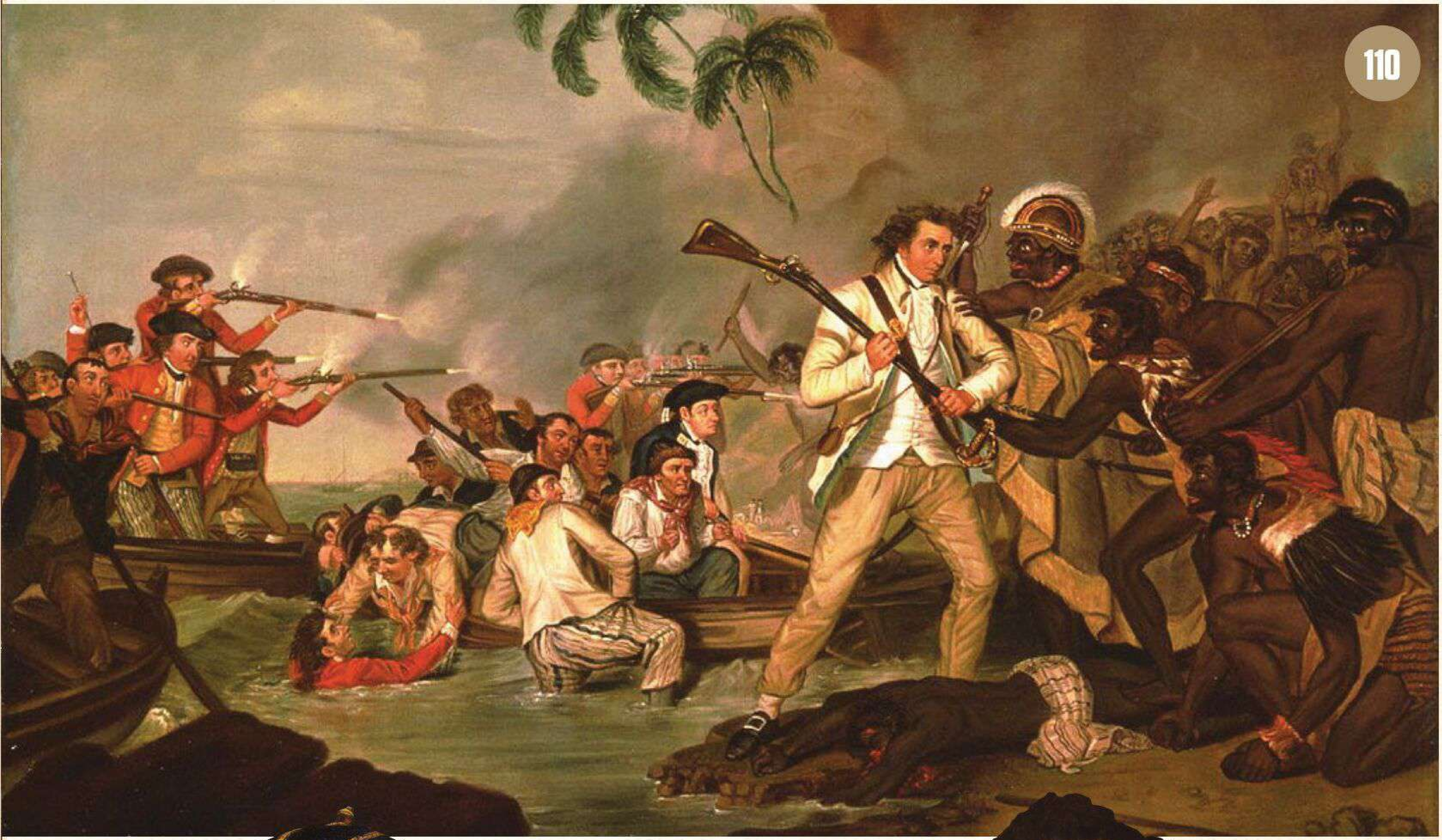
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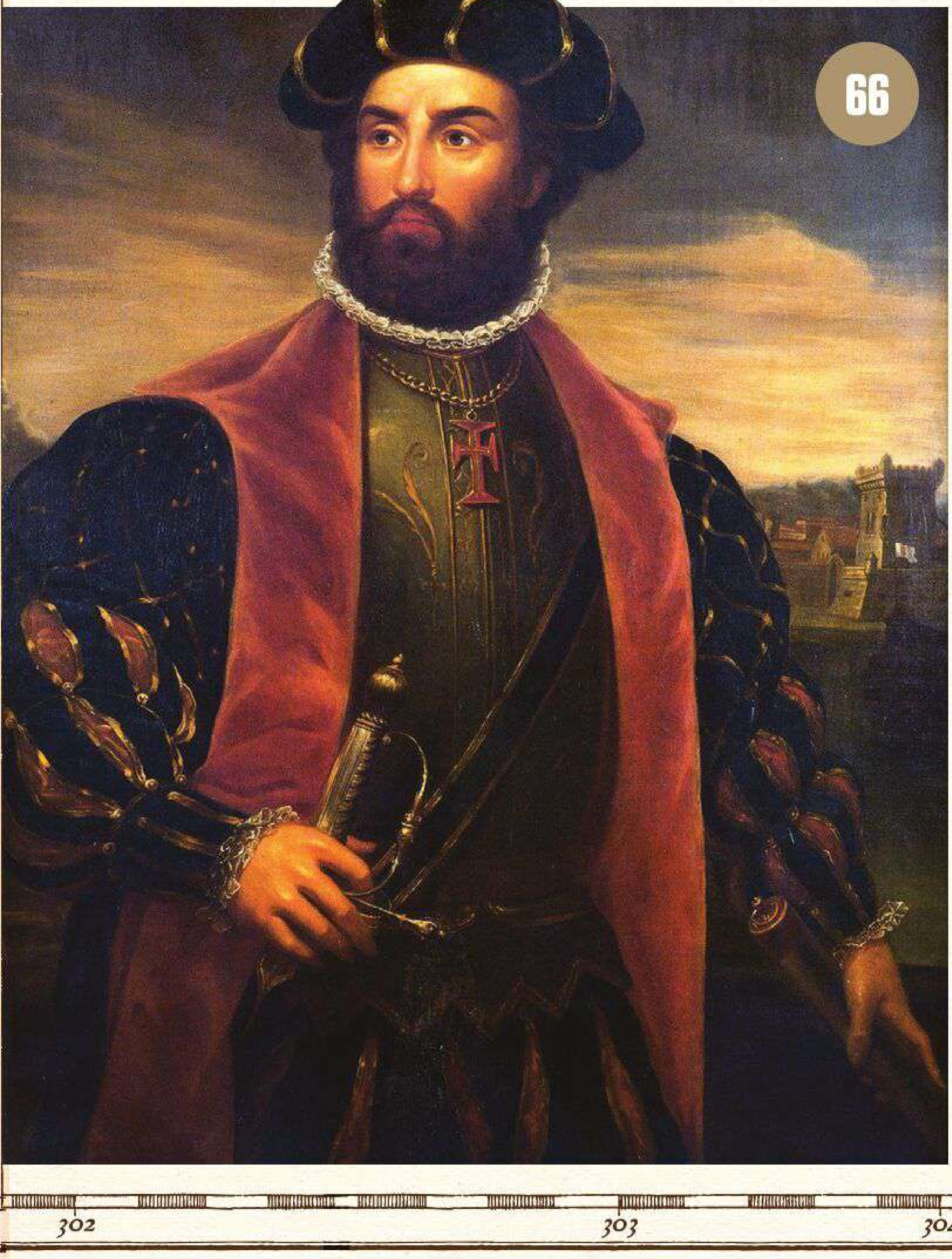
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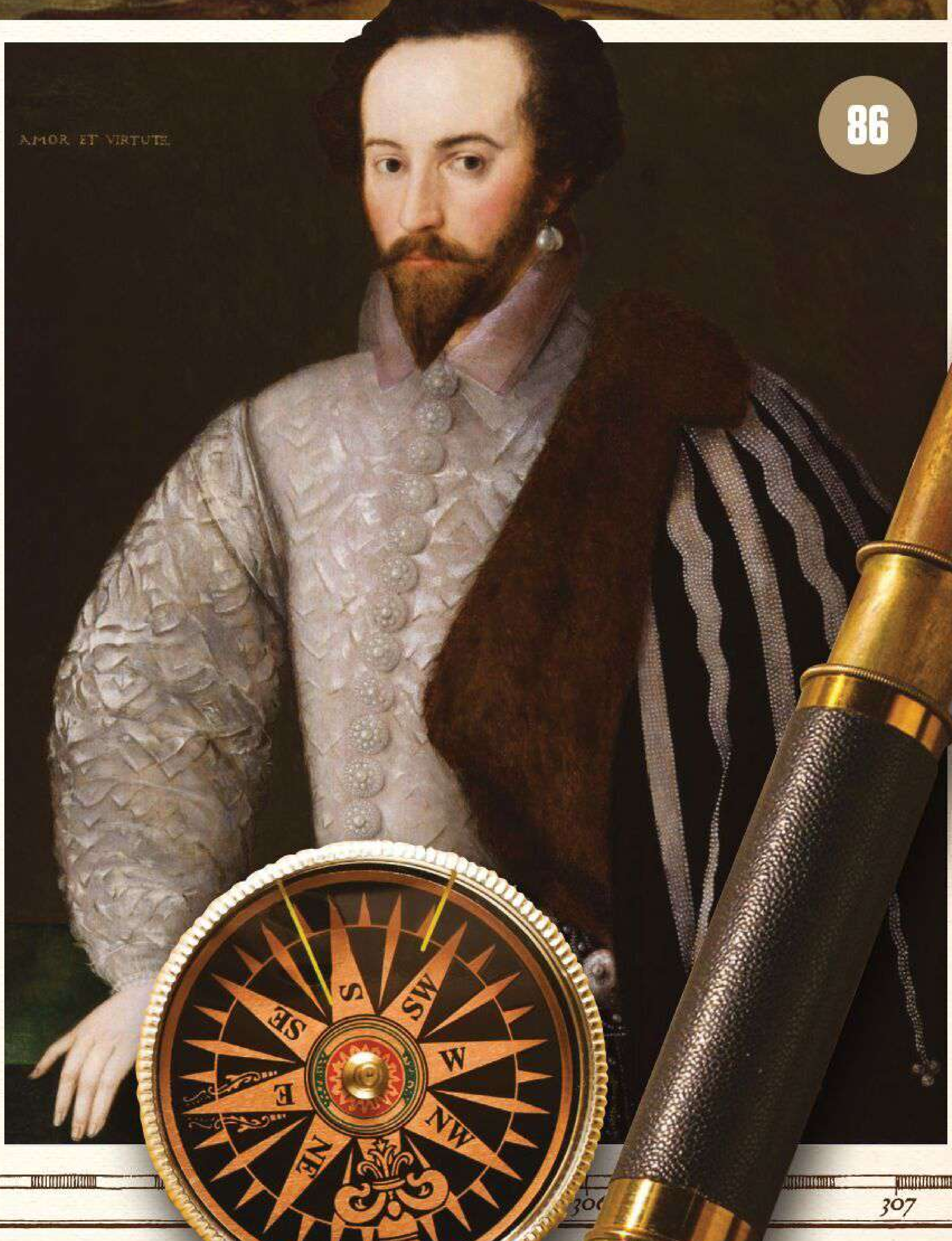
AMOR ET VIRTUTE
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Henry the Navigator

and the Age of Discovery

The endeavours funded by Portugal's Prince Henry, 'the Navigator', have long been regarded as the bedrock for Europe's age of global expansion

It was in August 1415 that the small, poverty-gripped country of Portugal – only recently unshackled from the grip of its mighty neighbour Castile – shocked the European superpowers. A fleet of Portuguese ships had sailed across the Straits of Gibraltar and sacked the Muslim port of Ceuta on the Moroccan coast. This burgeoning city was the flower of Islamic North Africa, and the gateway to the exotic lands beyond. And yet just three days after its capture, the city was awash with blood, its rich hoards of gold locked up in Portuguese coffers and the invaders revelling in the material and spiritual rewards of crusade. The tiny nation, its kings so poor they were unable to mint their own coinage, had served notice. Portugal was on the rise.

King João I (or King John), more flamboyantly known as 'John the Bastard', had ensured that his three sons took part in the siege and sacking of the city and it was here, as his countrymen bathed their hands in the blood of the infidel, that Prince Henrique (or Henry) first clapped eyes on the enormous bounty that might be his nation's harvest if it could venture deeper into the 'Dark Continent'. If King John's sacking of Ceuta acted as the foundation stone of Portuguese expansion, it was his son Henry's expeditions that built the pillars of empire.

Henry overlooked race, religion and creed when assembling the scholars and savants to further push Portuguese expansion

Henry was born in 1394 to King John and the English noblewoman Philippa of Lancaster, daughter of the pivotal Plantagenet figure John of Gaunt. Though contemporary biographers skimmed over much of Henry's youth, it is clear that his mother taught him to admire the knightly achievements of his Plantagenet forbearers, whose deeds of arms had done so much to boost English prestige in Europe. When knighted, all three of her sons selected Anglo-Norman mottos, Henry's choice of 'Talant de bien fere' – translating as 'a hunger to perform worthy deeds' – demonstrating his interest in the chivalric code. Crusade would forever remain a topic that was close to his heart.

In February 1416, King John appointed Henry to oversee all matters pertaining to the defence and governance of Ceuta, an important move as Henry now had a vested interest in a world to which most European princes never came into direct contact. When the allied Muslim armies

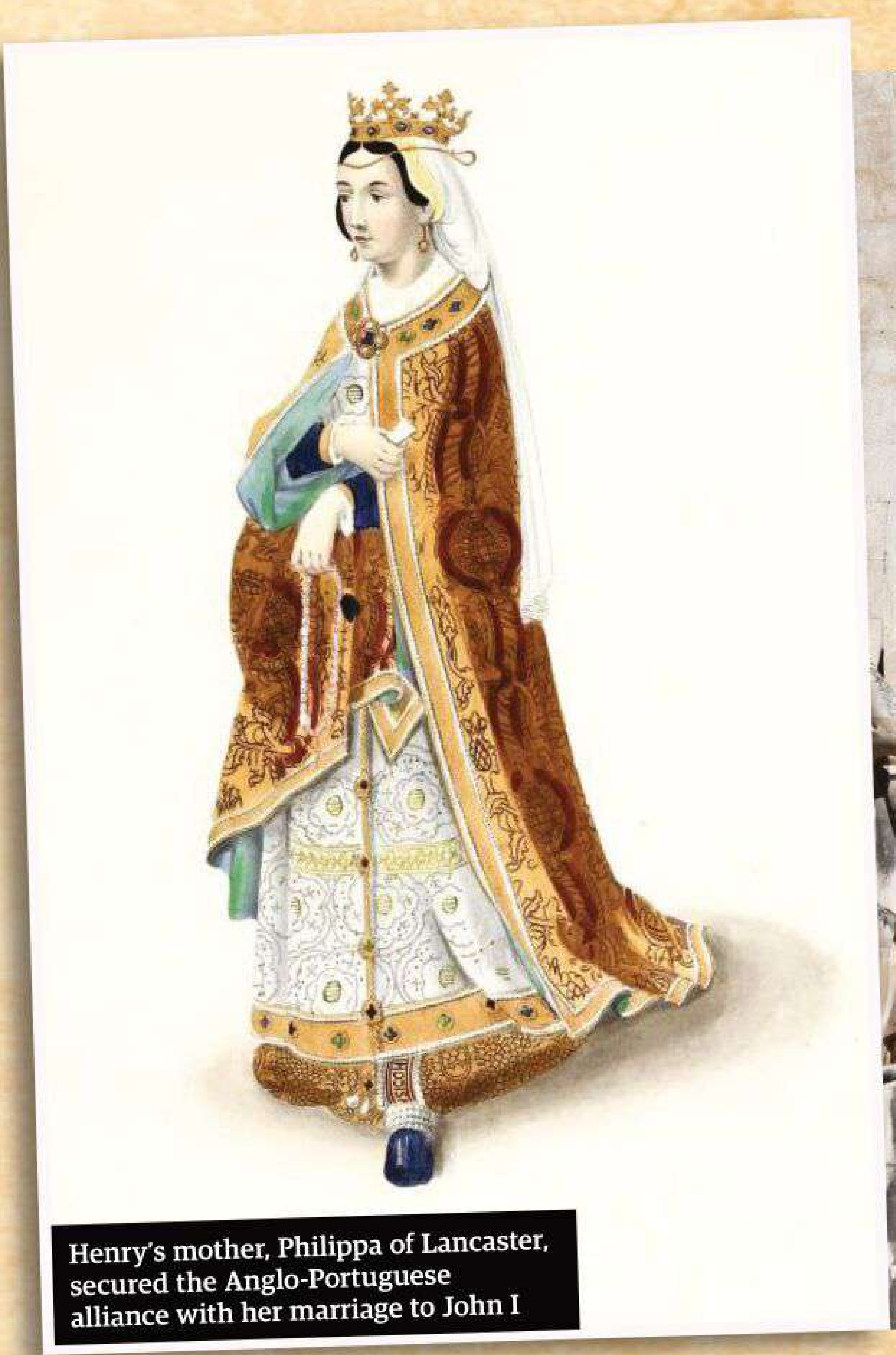
HENRY THE NAVIGATOR

1394-1460

Brief Bio

The Portuguese prince is famed for his patronage of voyages of discovery among the Atlantic islands as well as along the western coast of Africa. The epithet 'Navigator,' bestowed upon him by English writers, is actually a misnomer; although it is true he had a keen interest in cartography, he did not actually sail upon any of his voyages.

Henry the Navigator



Henry's mother, Philippa of Lancaster, secured the Anglo-Portuguese alliance with her marriage to John I

of Morocco and Granada joined forces in a bid to retake the city, Henry set sail with a heavily armed relief force, though the Portuguese garrison had already sent the besiegers packing by the time he arrived. Still, the enterprise reinforced Henry's crusading zeal.

He yearned to take Granada and history seems to suggest that the funds he received from the crown to maintain Ceuta were spent as he saw fit, with the monies not necessarily going toward prosaic administrative matters such as keeping the city war-ready. Instead, Henry regarded positive action against infidel as part of his remit, whether that was to fund his corsairs against Moorish shipping or to send his caravels down the African coast.

Henry received a further boost in 1420, when his father received papal permission to bring his country's military crusading order under control of the crown. Portugal no longer had a border with Islam and the crusading orders' wealth would be a huge boon to the royal coffers. One particular group, the elite Order of Christ, came under Henry's direct administrative control. This order was the heir to the Portuguese Knights Templar and to be the administrative head of such an illustrious band fitted well with Henry's self-perception as chivalrous knight errant. It also provided him with a nice stash of extra funds he could divert to fuel his own ambitions.

Indeed, it was not long after he took administrative control of the order that Henry shocked the members of the royal court by announcing he had been studying charts of the 'Ocean Sea', the Atlantic, expressing particular interest in two archipelagos that lay off the coast of North Africa, the Canary Islands and the group of islands around Madeira. The reasons for Henry's interest in exploration are unclear – up until this point, his great passion had been for further incursions against Islam – though it seems probable that the augmentation of his wealth and personal fame were more likely motivations than scientific enquiry.

> The hagiographic Chronicle of Guinea records Prince Henry's horoscope as a key contributor to his interest in oceanic discovery

The Canary Islands had already fallen within the compass of European interest, with the indigenous population and Christian colonists living under the protection of Castile, though this brooked little credence with Henry, who in 1424 despatched a substantial military invasion force. Claims that he hoped to convert the pagan inhabitants to Christianity seems rather far-fetched and similar assertions during his slave missions to Guinea in the years to come suggests a more sinister motivation. It would not have been the first time that Europeans had sent slaving missions to the Canaries.

As it transpired, the expedition proved a failure, the primitively armed inhabitants fighting off the Portuguese to Henry's great embarrassment. The defeat did not, however, diminish the prince's desire to establish a foothold in the Canaries and he would fight a number of unsuccessful colonial wars over the islands across the proceeding 30 years.

His activities in Madeira, on the other hand, proved more successful, not least because they were uninhabited. According to Henry's enthusiastic chronicler Zurara, it was his squires Zarco and Teixeira who discovered Madeira and the neighbouring island of Porto Santo, though really these were a re-discovery at best. It is thought that the first Portuguese colonists arrived around 1425 and on Madeira they discovered fine soil. The early years of colonialism were marked by successful cultivation.

Henry's interest in the Atlantic islands remained a constant and in 1439 he successfully petitioned the crown to send settlers to the Azores, a group of seven islands that tradition binds to Henry with an earlier expedition that had set out in 1425. As with Madeira, the colony prospered.

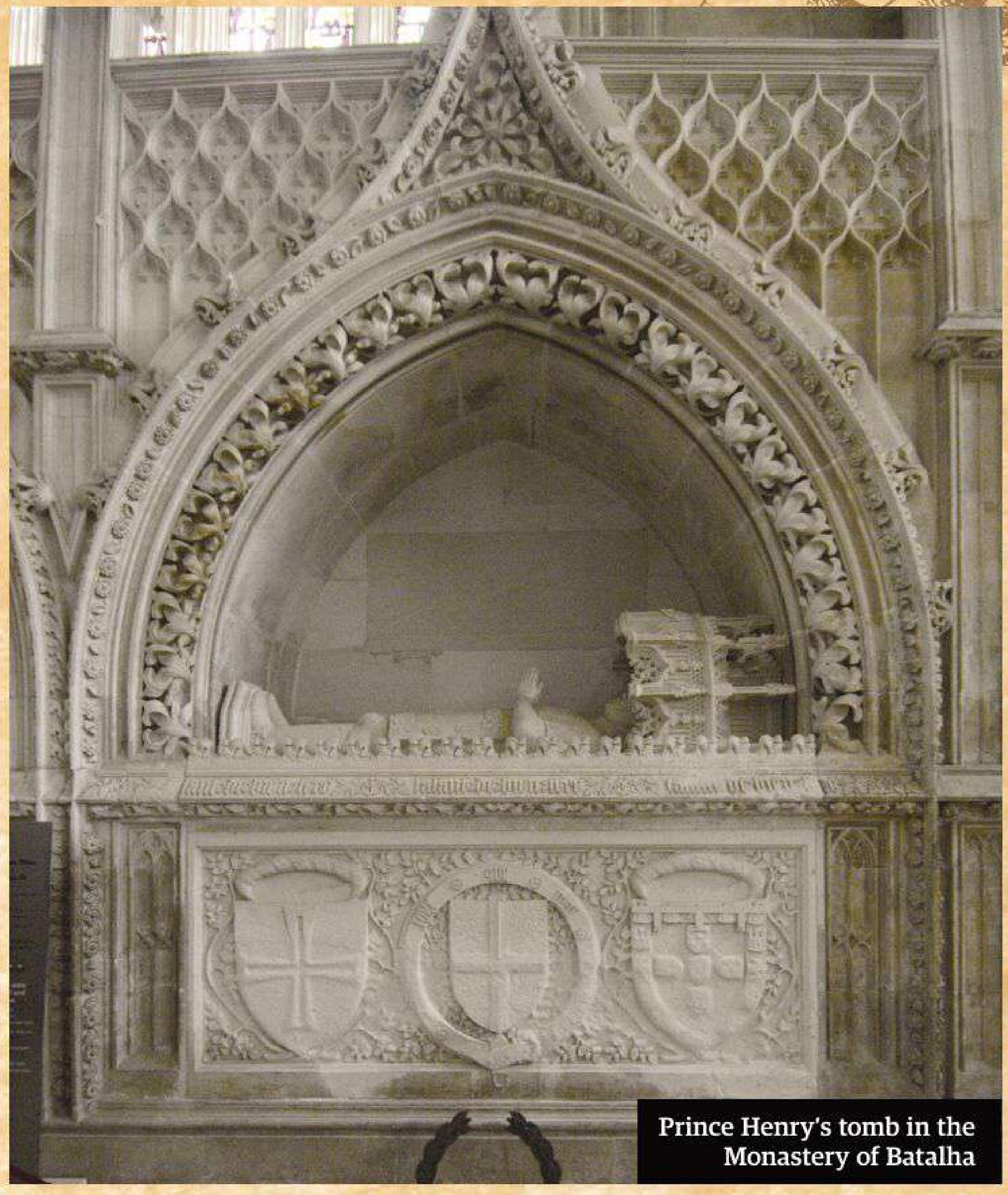
While success on the Atlantic islands warmed Henry's heart, his most ardent ambitions lay further south where he hoped to "sail beyond the sunset and baths of all the Western stars." Between 1425 and 1434 he repeatedly sent missions down the west coast of Africa with instructions to break new ground by sailing beyond the limit of European knowledge, which terminated at Cape Bojador. The cape bulged into the Atlantic around 1,000 miles southwest of Tangier and 100 miles south of the Canaries. It possessed an almost mystical reputation shrouded as it was in rumour and legend.

Here, the cliffs crumbled into the sea, currents clashed to form great whirlpools, while silver fish shimmered beneath the surface. Waves slammed against the reefs and the inland desert looked as barren as the underworld itself. For many mariners Cape Bojador was the Cape of No Return. Henry, however, was having none of it. He was convinced that the Cape could be surpassed and he despatched no fewer than 15 expeditions. They all failed.

It took a determined squire from Henry's own household, Eannes, to prove his prince correct. Henry charted yet another course for his squire. Eannes, on seeing the shoals and spray and shimmering sardines of Bojador, would turn west and sail further out into the ocean. Only when he'd travelled beyond the impassable cape would he turn east and approach land. And so he did, disembarking in safety and collecting a few bedraggled plants from the Saharan shore before charting his course back home. On arrival back in Portugal he received a hero's welcome.

Henry's successful prediction earned the prince high praise and his reputation as a cartographer and cosmologist was established, in Portugal at least. Scholars now believe that Henry's confidence in the rounding of Bojador was prompted by his reading of the *Book Of The Known World*, an anonymous and entirely fictitious account of a Castilian's adventures that were guided by a world map now lost. Like many contemporaries, Henry

The Monument to the Discoveries was created to commemorate 500 years since Henry's death



Prince Henry's tomb in the Monastery of Batalha

"It became commonplace for Henry's men to try and capture native tribesmen"

most likely bestowed upon this book high credence and it contained more than one reference to the author's travels beyond the cape.

Whatever the case, Henry was now in a position to send more expeditions beyond Bojador where, he hoped, they could deposit armies who could march inland under the banner of crusade and take the word of God to the infidel and pagan tribes. He even harboured hopes of finding the fabled Prester John, Christian emperor of the Indies (which in Henry's day referred to the lands of north east Africa), and forging an alliance against their Saracen enemies. Henry's dreams of finding the mythical ruler persisted throughout his life and no doubt figured in his explorations.

These aspirations were temporarily suspended, however, following a traumatic campaign in Tangier, and complications of regency demanded in the aftermath of the death of his brother, King Duarte. It was not until 1441 that Henry resumed exploration down the West African coast. Some captains were sent to resume exploration around Rio de Oro, the furthest point yet reached following the passing of Bojador. Here they might collect the skin and oil of sea-lions that were known to inhabit the area. Other captains were ordered to head further south and they soon found Cape Blanco and explored the great bay that it enclosed.

With papal and royal consent, Henry also continued his crusading ambitions and his chronicler records with gusto the deeds of arms of the Portuguese troops who were set ashore during the 1440s, though to the modern mind the notion of heavily armed and well-trained European troops laying into scantily armed fishermen and nomads appears less than chivalrous. It also became commonplace for Henry's men to try and capture native tribesmen for interrogation as the prince sought further information about the coast and the deserts that marked its shoreline.

Henry's older brother, Pedro, travelled in Europe and acquired a translation of Marco Polo's travelogue for him

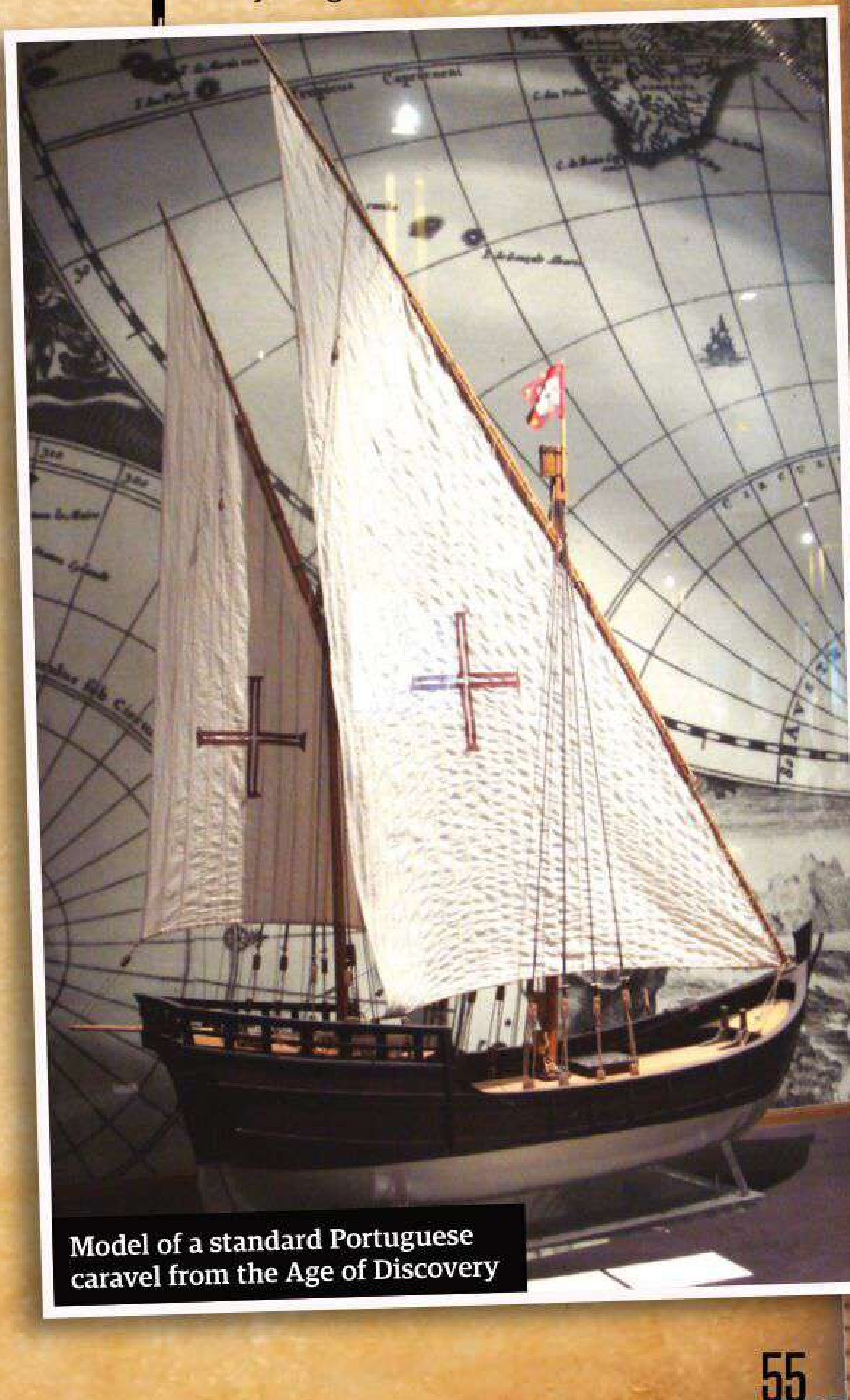
In 1444, however, these missions took a darker turn as one mission that year was despatched with a specific and more sinister design. Six ships, organised by Henry's henchman Lancarote da Ilha, sailed with orders to take slaves from the islands of the Arguin Bank, just south of Cape Blanco. It was Lancarote who funded the expedition, rather than the prince, but he required Henry's consent and, therefore, his complicity. The chronicler Zurara attended the auction of these slaves in August 1444

The caravels of conquest

"The caravels of Portugal being the best ships that travel the seas under sail," wrote Cadamosto, the Italian explorer who travelled often under Henry's patronage. "They could sail anywhere." And, certainly, they proved instrumental in Portuguese expansion overseas.

One of the great impediments to exploration of the West African coast were the north-westerly winds that hampered the return journey. The caravel, however, could circumnavigate this problem courtesy of its rig which saw its lateen, or triangular, sails suspended from a long yard attached obliquely to the mast. This enabled the caravel to sail far closer to the wind, and to be able to respond to much lighter breezes than the traditional, square-rigged vessels.

The caravel's hull was smooth, rather than comprised of overlapping logs, and was much slimmer than traditional vessels. Its slender draught made it ideal for negotiating the notorious shallows of the Arguin Bank, and for nudging up the African river systems. Its speed was also a boon when bidding to escape malevolent corsairs. The majority of caravels used by Henry's men had a capacity of around 40 or 50 tons and many were equipped with cannon. Folklore and superstition also saw the Portuguese caravels painted with an eye on each side of the prow. It is said that many African natives believed these eyes to be the mechanism behind the ships' ready navigation of unknown waters.



Model of a standard Portuguese caravel from the Age of Discovery and recorded both human misery as well as lavish spectacle.

Henry's involvement with the slave trade has long troubled his biographers. Apologists, such as Zurara, point to Henry's desire to convert these people to Christianity, while others suggest a validity fostered by the Africans' status as prisoners of war; both the Venetians and Genoese practised slavery while the Moors regularly sold their prisoners into servitude. Even the lauded crusaders of Outremer had employed captured Muslims as labourers on their estates. However Henry chose to justify his actions, the economic benefit was palpable and helped fuel further exploration.

One such mission was that of João Fernandes who set sail in 1445 on a mission with no slaving implications. Fernandes was to be dropped on the Rio de Oro to spend an entire winter exploring inland. After many adventures he returned to Portugal with news of fertile lands to the south, rich in people and gold dust. The previous year, Dinis Dias reached Cape Verde while Nuno Tristao in 1446 arrived at the mouth of the Gambia River.

During the following decade, the likes of Alvise Cadamosto, an Italian explorer on Henry's payroll, and Diogo Gomes, made further journeys down the African coast. Below Cape Verde they pierced the lands south of the Sahara on the Guinea Coast and Henry believed, or certainly hoped, that his ships would soon round the continent's southern tip and head towards the silk-rich spice lands he'd read in *The Travels Of Marco Polo*.

As it transpired, Henry's crusading ambitions closer to home dominated his final years as he sought once more to wage war against the infidel in Morocco, though his interest in African voyages did not flag entirely. It was not until Henry's death in 1460 that Portugal's interest in the African coast faltered, though it soon gathered momentum once more in the 1480s when Prince João ascended the throne. Under his auspices, Diogo Cao in 1482 discovered the Congo River and six years later, Bartolomeu Dias finally reached the southern tip of the continent at the Cape of Good Hope.

And still this adventurous nation pushed on. The Treaty of Tordesillas, signed with Spain in 1494, suggests Portugal was already aware of lands in the south Atlantic, though Brazil was not officially discovered until Pedro Alvares Cabral's landing in 1500. In 1498, meanwhile, Vasco da Gama became the first European sailor to reach India by sea and in 1510 the Portuguese seized Goa, establishing a foothold on the subcontinent's western seaboard. From the Indian Ocean the Portuguese passed into the China seas, founding a permanent base in Macao in 1557. In a little over 100 years, and owing so much to Henry's initial prompting, this tiny, cash-strapped nation had opened up the world to European commerce and placed itself at the centre.

> The failed 1437 crusade against Tangier saw Henry's brother, Fernando, left behind as hostage. His death haunted Henry

ARCTIC OCEAN
Greenland
(DENMARK)
Baffin Bay
Beaufort Sea
U.S.
Dawson
Anchorage
CANADA
Hudson Bay
Labrador Sea
Edmonton
Vancouver
Winnipeg
Quebec
Toronto
Chicago
New York
Washington, D.C.
Denver
UNITED STATES
Los Angeles
Dallas
NORTH PACIFIC OCEAN
NORTH ATLANTIC OCEAN
HAWAIIAN ISLANDS
MEXICO
Mexico City
Gulf of Mexico
THE BAHAMAS
CUBA
JAMAICA
Caribbean Sea
BELIZE
GUATEMALA
HONDURAS
EL SALVADOR
NICARAGUA
COSTA RICA
PANAMA
Caracas
VENEZUELA
GUYANA
SURINAME
French Guiana
Bogota
COLOMBIA
ECUADOR
Manaus
PERU
Lima
BRAZIL
Brasilia
BOLIVIA
PARAGUAY
Sao Paulo
URUGUAY
Buenos Aires
Santiago
CHILE
ARGENTINA
Falkland Islands
KIRIBATI
LINE ISLANDS
ILES MARQUISES
Cook Islands
French Polynesia
(FRANCE)
Pitcairn Islands
Easter Island
SOUTH PACIFIC OCEAN
NICARAGUA
COSTA RICA
PANAMA

Bounty from the African coast

The African continent was the source of many treasures coveted by European traders and citizens

1. Slaves

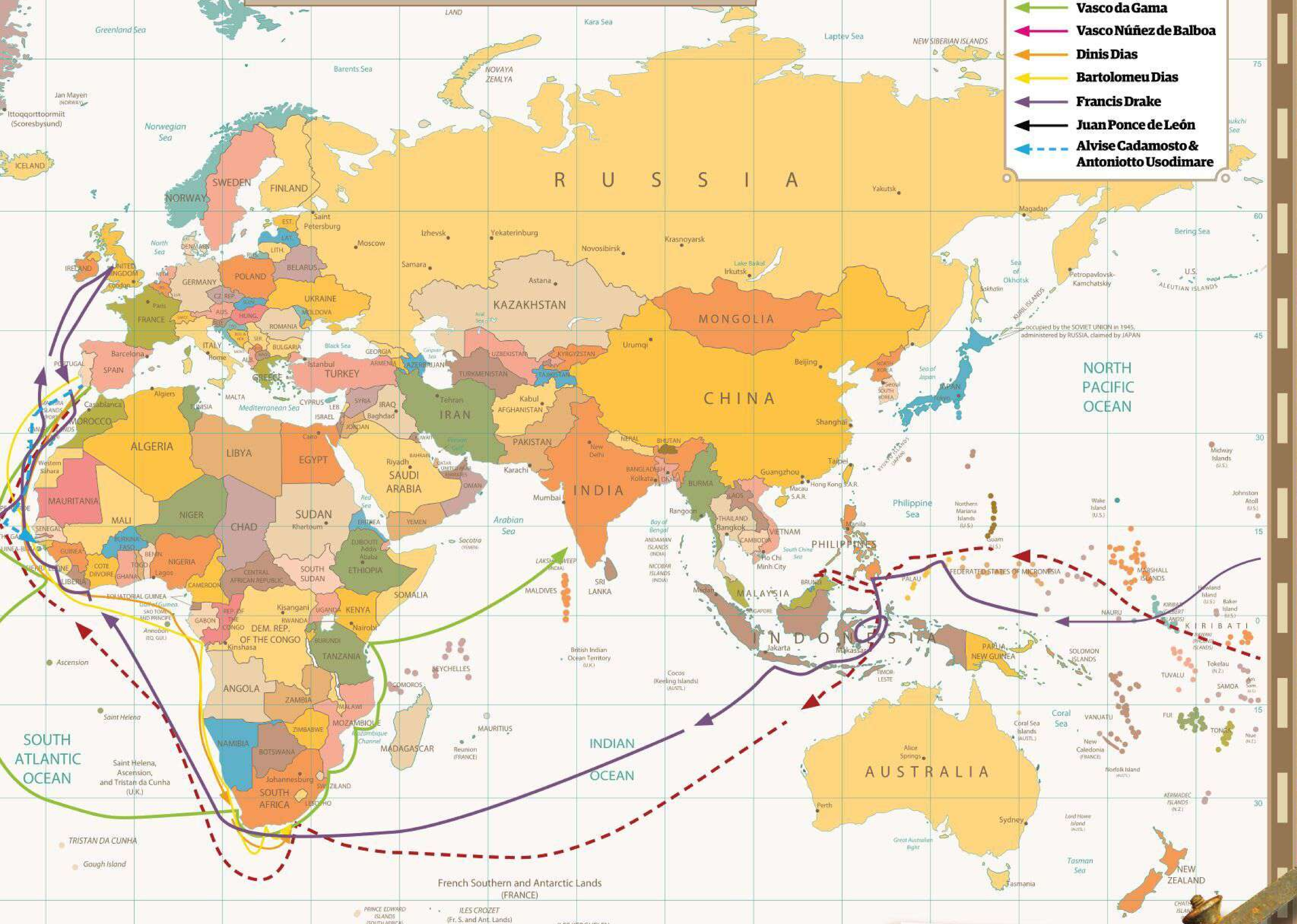
The Portuguese trade in slaves had become sufficiently established for Henry to order the building of a fort and warehouse on Arguin Island by 1448.

2. Dragon's Blood

This valuable resin from the dragon tree proved a useful commodity, prompting many visits to the Canaries. It was widely used in the dyeing industry.

Major Voyages in the Age of Discovery

From the 15th Century to the 18th Century, the world was subject to extensive explorations

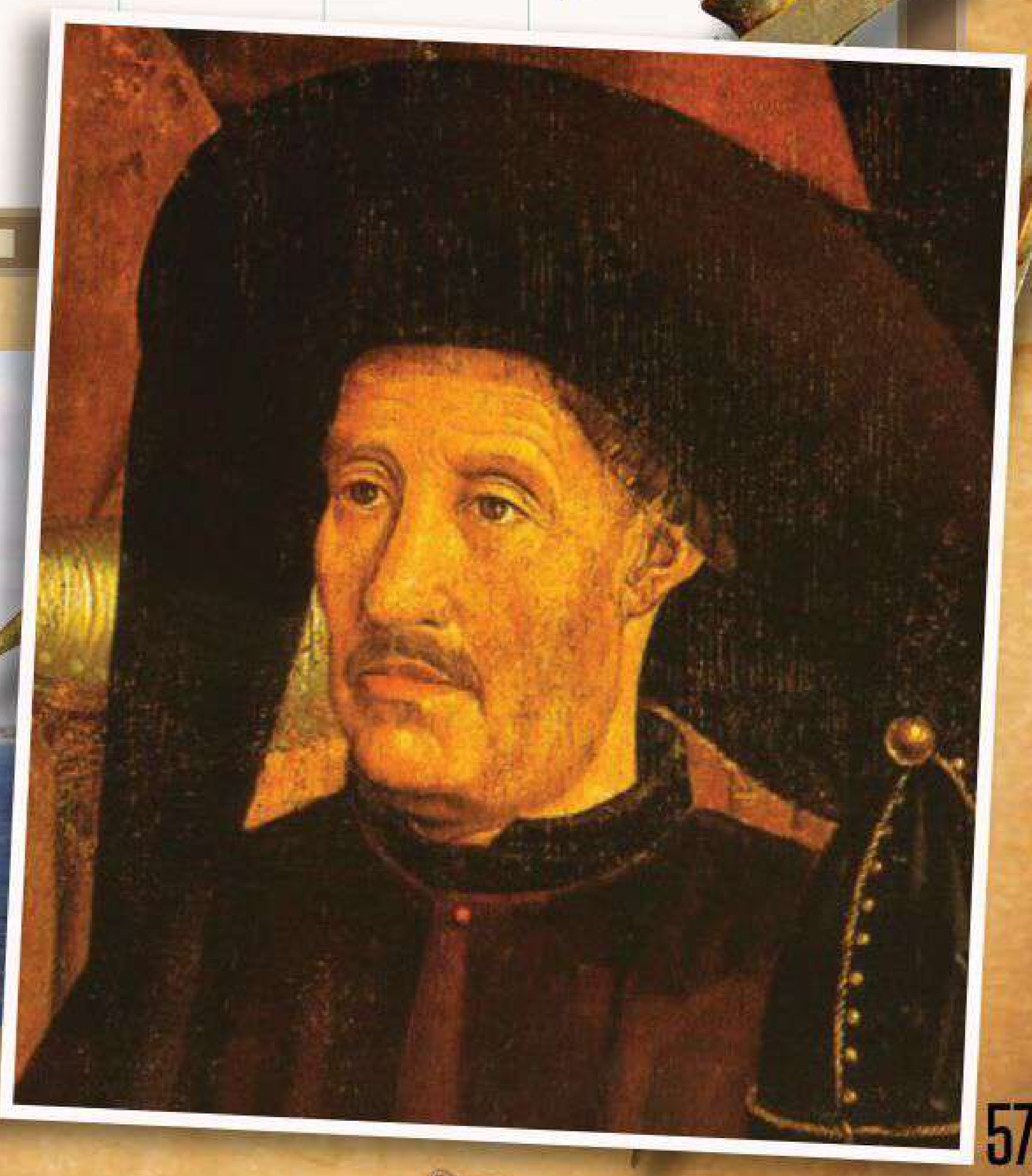

KEY
Ferdinand Magellan
Vasco da Gama
Vasco Núñez de Balboa
Dinis Dias
Bartolomeu Dias
Francis Drake
Juan Ponce de León
Alvise Cadamosto & Antoniotto Usodimare
RUSSIA
KAZAKHSTAN
MONGOLIA
CHINA
INDIA
ALGERIA
LIBYA
EGYPT
SUDAN
AUSTRALIA
NORTH PACIFIC OCEAN
INDIAN OCEAN
SOUTH ATLANTIC OCEAN
INDONESIA
French Southern and Antarctic Lands (FRANCE)

3. Spices

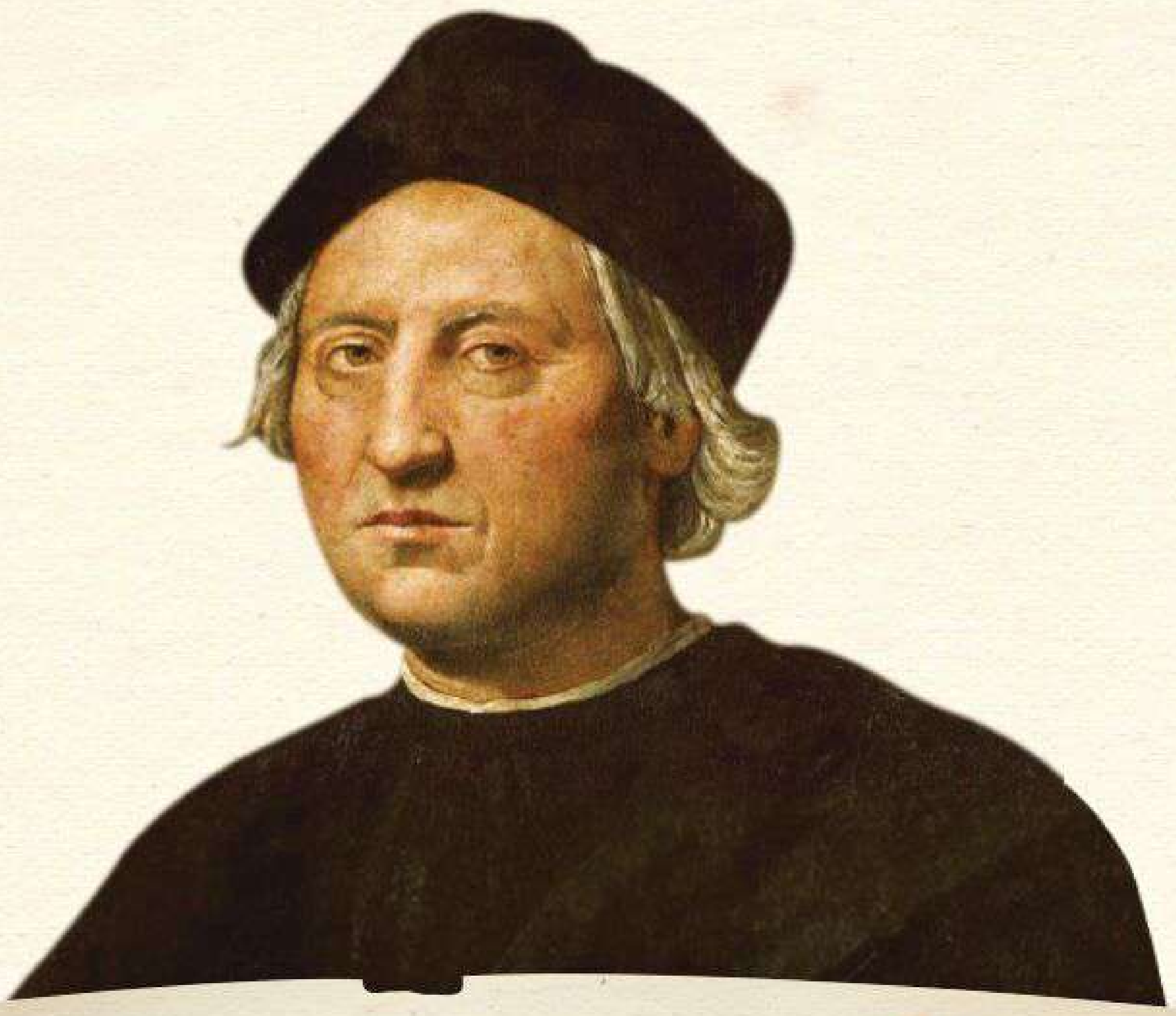
During Henry's time, the term 'spice' covered a broad range of medicinal drugs, perfumes and cosmetics, though it was mainly used to describe seasonings, such as pepper (pictured).

4. Gold

Gold was a key motivator in so much overseas expansion. In Henry's era, it usually arrived in Europe via camel caravan from the alluvial mines beyond the Sahara in Guinea.



"He secured the patronage of the Spanish monarchs Ferdinand II of Aragon and Isabella I of Castile who agreed to fund his plans to explore the New World"



COLUMBUS

EXPLORER · ICON · MURDERER

Christopher Columbus was instrumental in defining the New World, but did he rule his new-found lands with a brutal and bloody iron fist?

The son of middle-class Genoan wool weavers, Christopher Columbus is not your usual child. Driven and incessantly inquisitive, the young boy is fascinated with the maps and charts the traders and seafarers bring to his coastal home in Italy. Something about those empty spaces on the intricately marked canvas calls to him, a fantastical need to fill those gaps and claim the glory such discoveries would surely bring. The unknown doesn't unsettle him, like it does many people of the time – in fact, it does the opposite: it captivates him. Seeing a rare tenacity in his eldest son, his father spends what money a wool weaver can spare and secures a place for Columbus at the University of Pavia. There he studies grammar, geography, geometry, astronomy, navigation and Latin – but for all his studies, the young Genoan finds his mind drifting to those blanks voids on the map. This hunger would define his life forever.

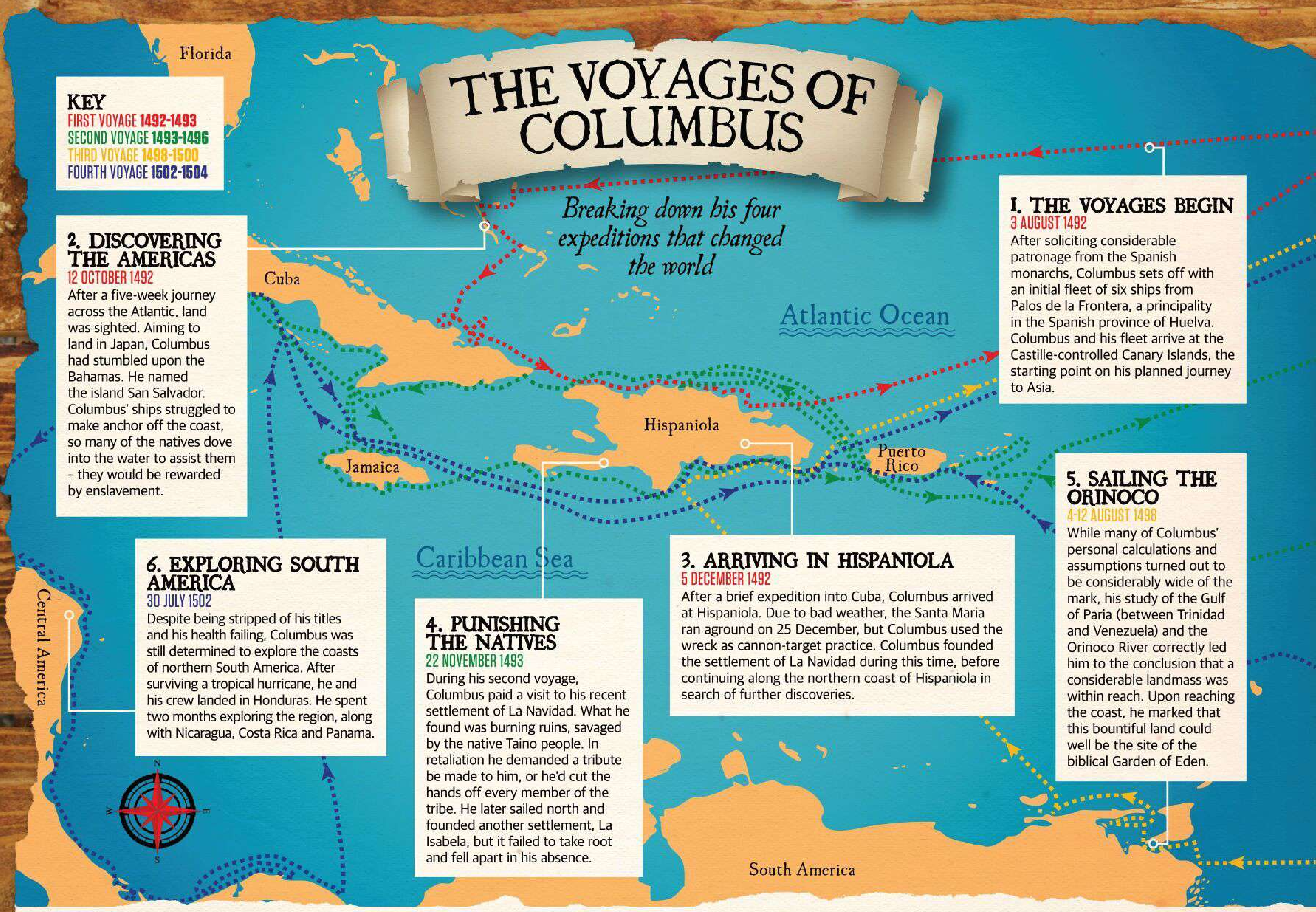
In 1470, Columbus gains an apprenticeship working as a business agent for three influential Genoan families. His learned background and tenacity in the face of adversity makes him a ferocious businessman and he's soon captaining ships that carve the ocean like blades. His work takes him far and wide across the civilised world: Lisbon, Bristol, Galway, West Africa and even settlements in Iceland become common ports of call. While deeply pious, Columbus steadily builds a reputation for ruthless determination. But for all his years of trade and commerce in these establishment lands, Columbus would always find his mind drifting to those incomplete maps he pored over as a child. The only thing standing between him and those fabled lands of untold riches was money. It was time to find a patron – an incredibly wealthy patron.

For many years, Europe held a distant yet lucrative trade relationship with the East. While under the rule of the once-rampant Mongol Empire, European traders travelled a relatively safe route of passage to China known as the Silk Road, but now that Constantinople had fallen to the Turks, the route was rife with piracy. The East was now too dangerous a path to take, even for the most hardened of captains. Columbus was searching for a new route to India and the riches of Asia and to achieve this his plan was simple: sail west across the Ocean Sea (the 15th and 16th-century name for the Atlantic Ocean).

Sailing west wasn't just a case of turning your ships about and sailing away from the Orient, though. Since a portion of the map remained undefined on Western charts, the view of scholars, geographers and seafarers was a skewed one. Theories that the Earth was a flat disc persisted among some, but it was more the misinterpretations and speculation involving the distances between Europe and Asia, as well as the actual size of the mysterious continents and islands that were rumoured to lie beyond the storm-ridden oceans. Even Columbus' own theories were wildly inaccurate, but his intensity and sheer persistence made him stand out from his peers. He eventually secured the patronage of the Spanish monarchs Ferdinand II of Aragon and Isabella I of Castile, who agree to fund his plans to explore the New World and claim it the name of a unified, Catholic Spain.

THE VOYAGES OF COLUMBUS

Breaking down his four expeditions that changed the world



1. THE VOYAGES BEGIN

3 AUGUST 1492

After soliciting considerable patronage from the Spanish monarchs, Columbus sets off with an initial fleet of six ships from Palos de la Frontera, a principality in the Spanish province of Huelva. Columbus and his fleet arrive at the Castille-controlled Canary Islands, the starting point on his planned journey to Asia.

2. DISCOVERING THE AMERICAS

12 OCTOBER 1492

After a five-week journey across the Atlantic, land was sighted. Aiming to land in Japan, Columbus had stumbled upon the Bahamas. He named the island San Salvador. Columbus' ships struggled to make anchor off the coast, so many of the natives dove into the water to assist them – they would be rewarded by enslavement.

3. ARRIVING IN HISPANIOLA

5 DECEMBER 1492

After a brief expedition into Cuba, Columbus arrived at Hispaniola. Due to bad weather, the Santa Maria ran aground on 25 December, but Columbus used the wreck as cannon-target practice. Columbus founded the settlement of La Navidad during this time, before continuing along the northern coast of Hispaniola in search of further discoveries.

4. PUNISHING THE NATIVES

22 NOVEMBER 1493

During his second voyage, Columbus paid a visit to his recent settlement of La Navidad. What he found was burning ruins, savaged by the native Taino people. In retaliation he demanded a tribute be made to him, or he'd cut the hands off every member of the tribe. He later sailed north and founded another settlement, La Isabela, but it failed to take root and fell apart in his absence.

5. SAILING THE ORINOCO

4-12 AUGUST 1498

While many of Columbus' personal calculations and assumptions turned out to be considerably wide of the mark, his study of the Gulf of Paria (between Trinidad and Venezuela) and the Orinoco River correctly led him to the conclusion that a considerable landmass was within reach. Upon reaching the coast, he marked that this bountiful land could well be the site of the biblical Garden of Eden.

6. EXPLORING SOUTH AMERICA

30 JULY 1502

Despite being stripped of his titles and his health failing, Columbus was still determined to explore the coasts of northern South America. After surviving a tropical hurricane, he and his crew landed in Honduras. He spent two months exploring the region, along with Nicaragua, Costa Rica and Panama.

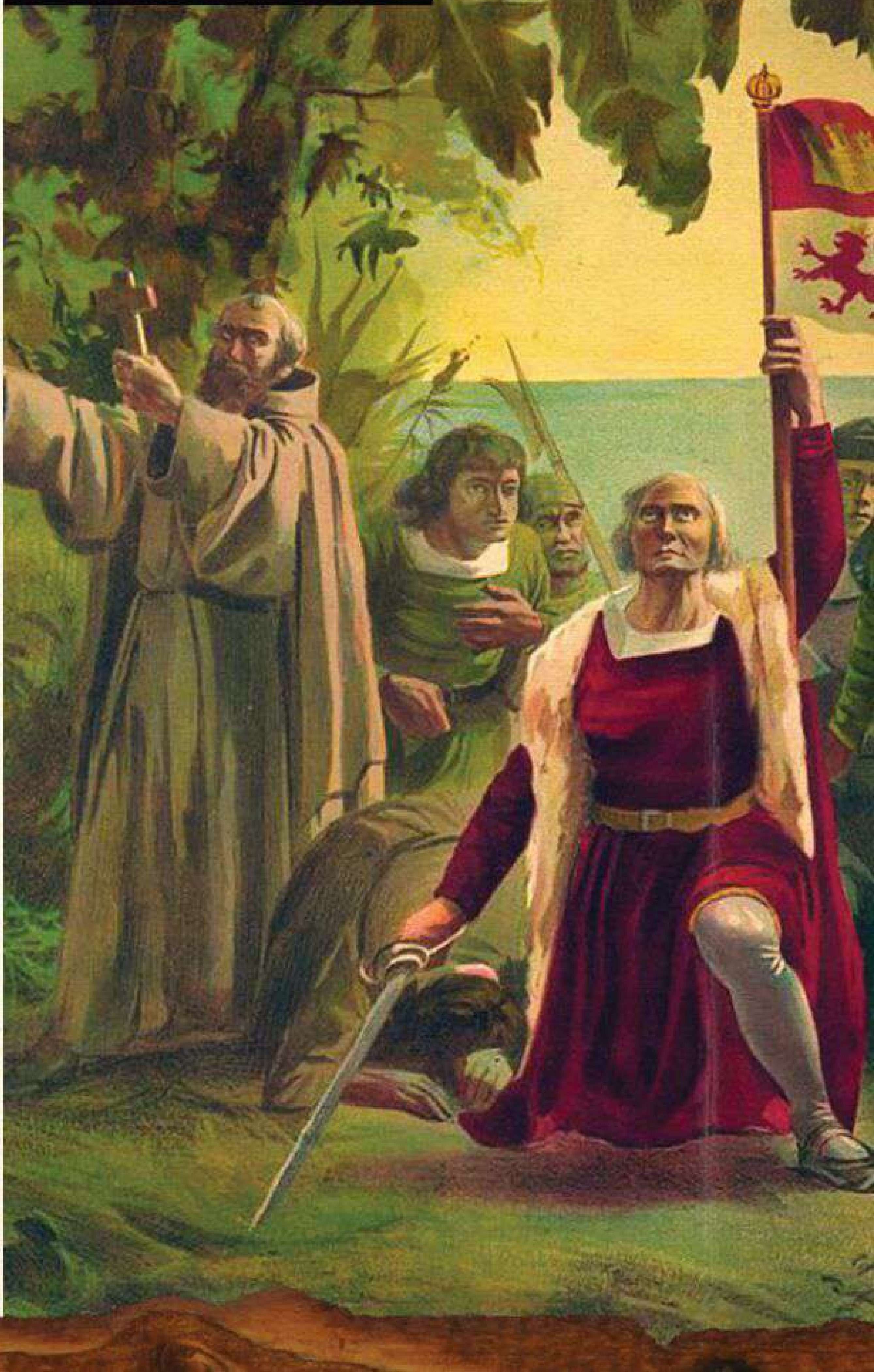
On the morning of 3 August 1492, with a contingent of three ships and two smaller caravels, Columbus sets sail from Palos de la Frontera. The swells are relatively calm and the ships carve a path toward the Canary Islands in a few days, before restocking supplies and setting sail for Japan. The three ships sail deeper into the unknown. Violent winds and angry swells buffet them across the waves, their intended course ripped apart by tropical storms these westbound seafarers have little experience with. By 12 October, morale on the ships is at a dangerously low – men have drowned in storms, masts have been broken by vicious gales and even a small mutiny breaks out. Columbus, sat within the confines of his cabin, stares at the maps before him. He knows their course has been broken, but it's the time at sea that troubles him the most. They should have set foot on new lands long before now. Time is running out.

Suddenly, out of nowhere, one of sailors above screams at the top of his voice: "Land! Land ahoy!" Columbus rushes from his desk, candles, papers and wine flying in his wake. The spray of the swaying oceans stings him in the face after so many hours in a stuffy cabin, but he's soon scrambling onto the poop deck, the prospect of land driving him forward. He squints and takes his first glimpse of a brand new world. Lush greenery and a pale-coloured beach can be seen in the distance, birds of a peculiar colour circling above the canopy. It's then that he sees them: dark-skinned men and women are watching, most of them barely dressed at all, spears and bows clutched in their hands.

A few hours later, all three ships are anchored at a safe distance and the three crews are now safely on land. Columbus is standing upon Watling Island (which would later form part of the Bahamas). He names it San Salvador and claims it for the glory of Spain. Over the next few days, Columbus meets with the three main tribes of the island – the Taino, the Arawak and the Lucayan – and begins building a relationship that tells him a great deal about this new Eden. Only one other tribe, based on a distant island, is aggressive toward them, occasionally landing raiding parties to take slaves. In one of his journal entries, Columbus remarks: "I could conquer the whole of them with 50 men, and govern them as I please." Columbus views them less as people and more as another acquisition with which he can return to Spain. While this attitude may seem callous, it is a common one that will eventually drive and maintain the slave trade for hundreds of years to come. After a week or more on San Salvador, he begins searching the surrounding waters, eventually arriving on the northern coast of Cuba, before landing on the cost of Hispaniola on 5 December 1492.

Hispaniola is a much larger land mass than the first island he embarked on, and with a calm

A highly stylised depiction of Columbus' first landing in America in 1492



sea behind him and stories of a realm rich with gold and other treasures, Columbus is confident he's found the beginning of his own legacy. In a matter of weeks he establishes a settlement on the island, La Navidad, and on 25 December orders a specially chosen crew of his most trusted seafarers to take the Santa Maria and sail north and conduct more reconnaissance. Unfortunately, Columbus is drunk at the time he gives the orders, as is the crew he appoints. In a matter of a few hours, half the crew fall asleep and the boat crashes into the rocks.

On 13 January 1493, Columbus meets with the carique (the head chieftain of the Taino peoples) of Hispaniola, Guacanagari, who agrees to the explorer's request to leave 39 of his crew behind to populate the settlement. He leaves on the last exploratory part of his first voyage and arrives some days later on the Samana Peninsula, where he encounters the far less friendly Ciguayos tribe. The carique on the island refuses to grant Columbus leave to establish a settlement; battle soon ensues and two of the tribe's people are killed. As punishment, Columbus captures 30 of their people and sets sail for Spain – only seven of the captives survive the long trip back to Europe.

> "La Navidad has been razed to the ground, burned to a cinder by the Taino people that had been so accommodating the year before"

Upon returning to the court of the Spanish monarchs, Columbus becomes the talk of Europe with his journals, maps, fruits, spices, gold and native captives. His irrefutable proof of a new land between Europe and Asia now laid before them, Isabella and Ferdinand happily award Columbus the titles previously agreed, and he becomes the Admiral of the Open Sea and viceroy and governor of all the lands he discovers. In order to ensure the expansion of Hispaniola, Columbus sends his brother Bartolomeo along with a consignment of sailors, soldiers and tradesmen soon after.

On 24 September, Columbus sets out on his second major voyage. It's an expedition that takes a far more southerly route, taking in the other islands in the Bahamas, as well as a stopover in Jamaica. On 22 November, Columbus and his fleet of 17 ships turn their bows toward Hispaniola, the Genoan governor ready to see the plans he gave his brother back in Cadiz come to life. What he finds is a burning ruin. La Navidad has been razed, burned to a cinder by the Taino people that had been so accommodating the year before. He had brought civility to their darkened corner of the Earth. He had given them stability. He had given them the power of Christ.

LIFE ON THE WAVES

What was the reality of sailing the oceans in the 15th century?

Ship's surgeon

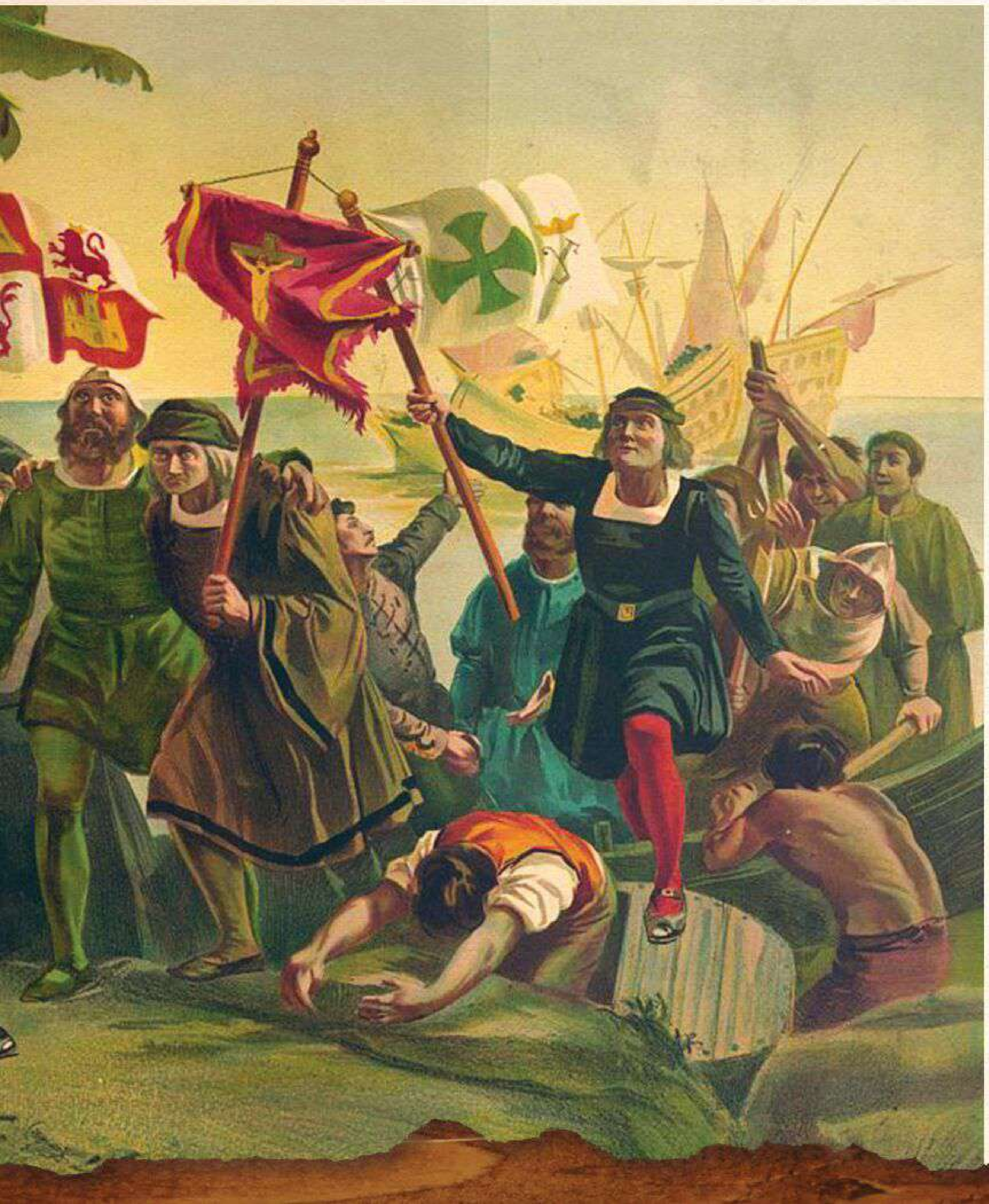
Life aboard a 150-tonne ship was fraught with dangers. Cannons could misfire, limbs could be broken by broken masts and flailing rigging, as well as the various diseases and ailments that could affect the crew. At the heart of all this was the ship's surgeon, whose role was to ensure a crew remained fit enough to fulfil their duties, however gruesome the treatment.

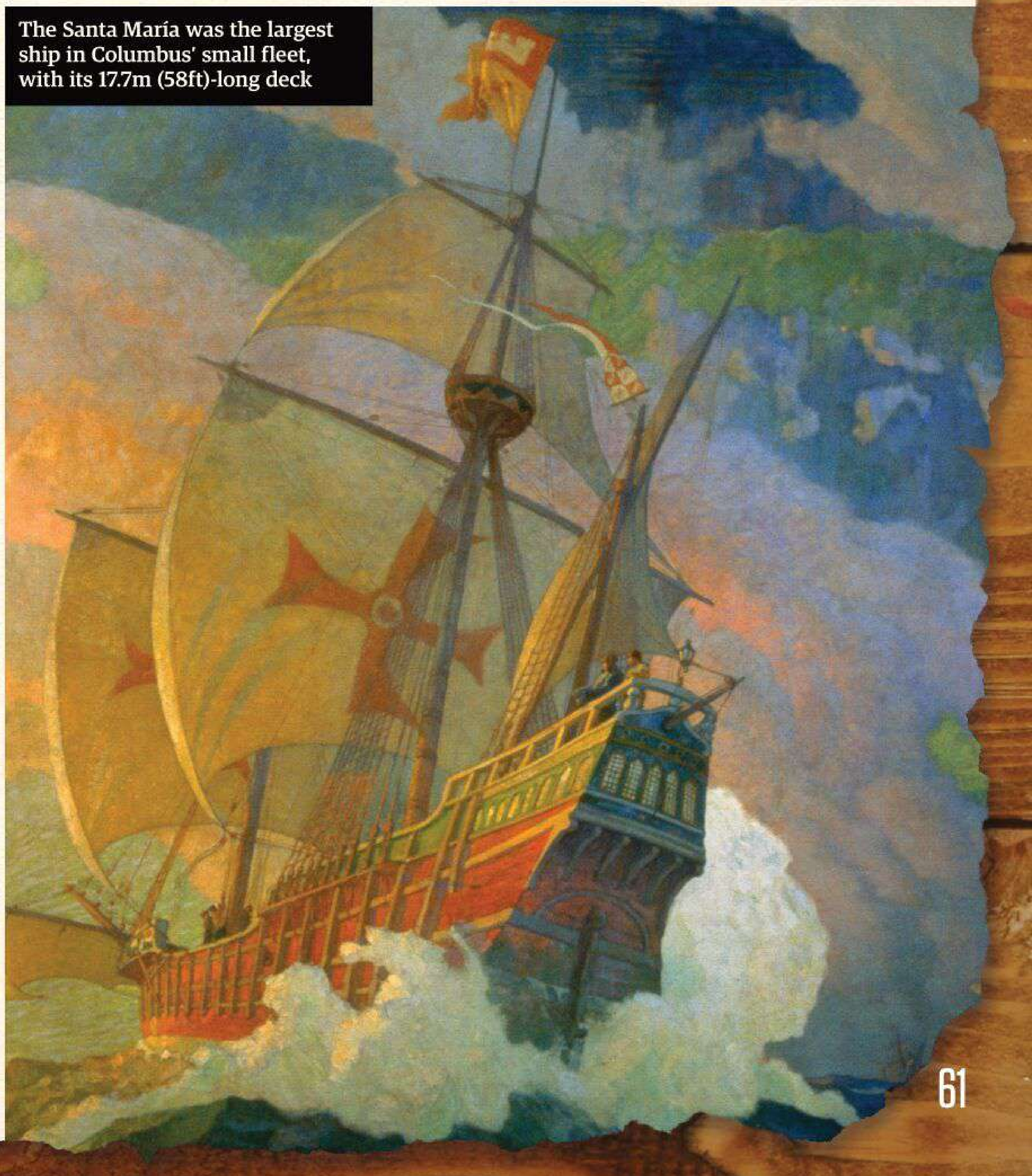
Boatswain

The boatswain was one of the most important members of a ship, and with that responsibility came its fair share of danger. A boatswain, usually the third or fourth mate, was in charge of maintaining the ship's deck and ensuring the sails and rigging remained in the best condition. In moments of emergency, such as a raging fire (a common occurrence due to power kegs overheating in hot, dry temperatures) and storms, a boatswain would be first on the scene.

Ordinary seaman

For all the master gunners and quartermasters, there was always need for seamen willing to do the hard graft that life at sea demanded. Known rather less affectionately to their fellow crew as 'swabbers', ordinary seamen found themselves doing the Santa Maria's worst jobs. Pumping and removing bilge (the stagnant water that collects in the lowest compartment of a ship), untangling knotted rigging and swabbing the decks clean were just some of their chores.





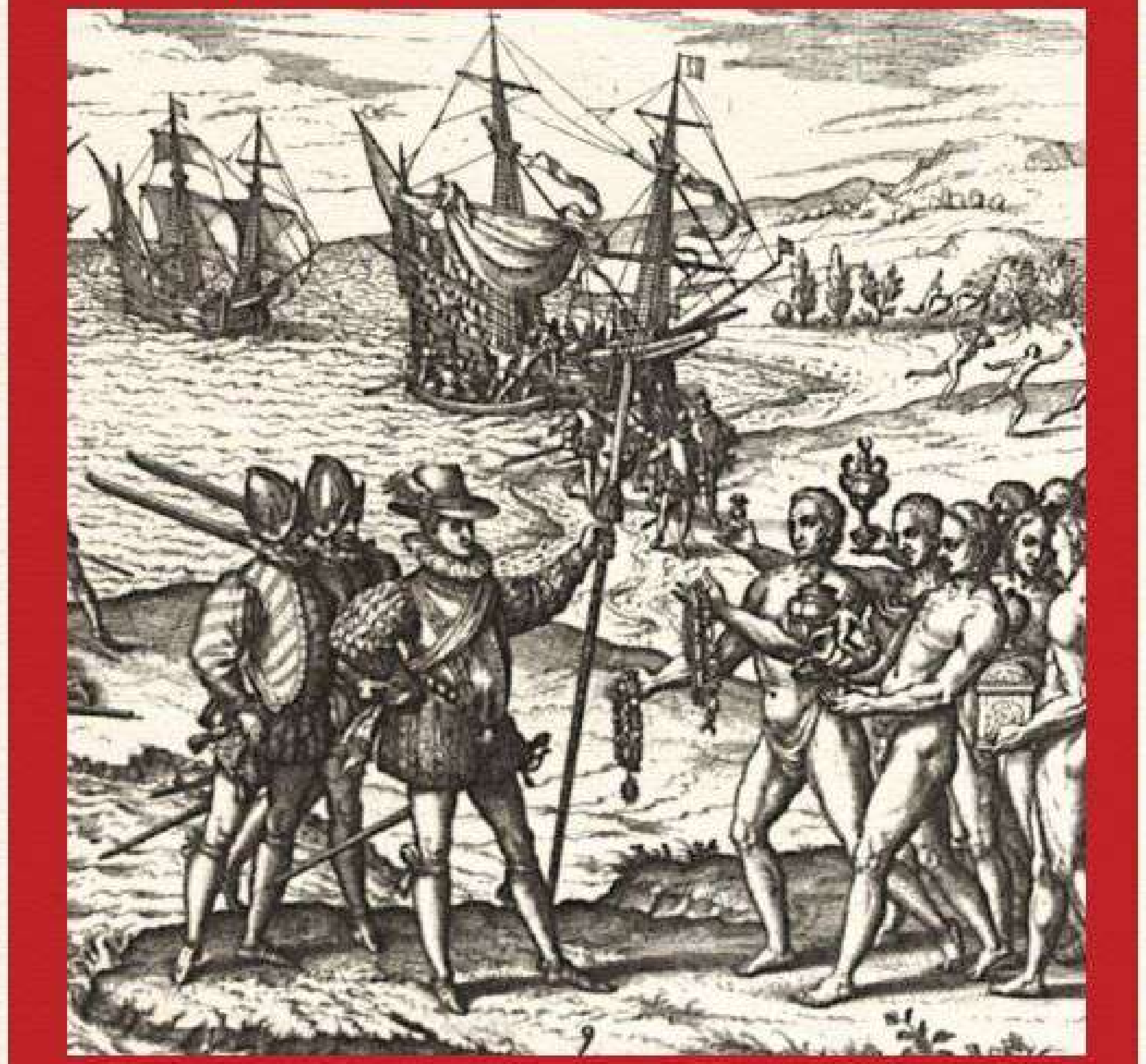
The Santa María was the largest ship in Columbus' small fleet, with its 17.7m (58ft)-long deck

CUTTHROAT COLUMBUS

Three of the legendary explorer's most brutal actions

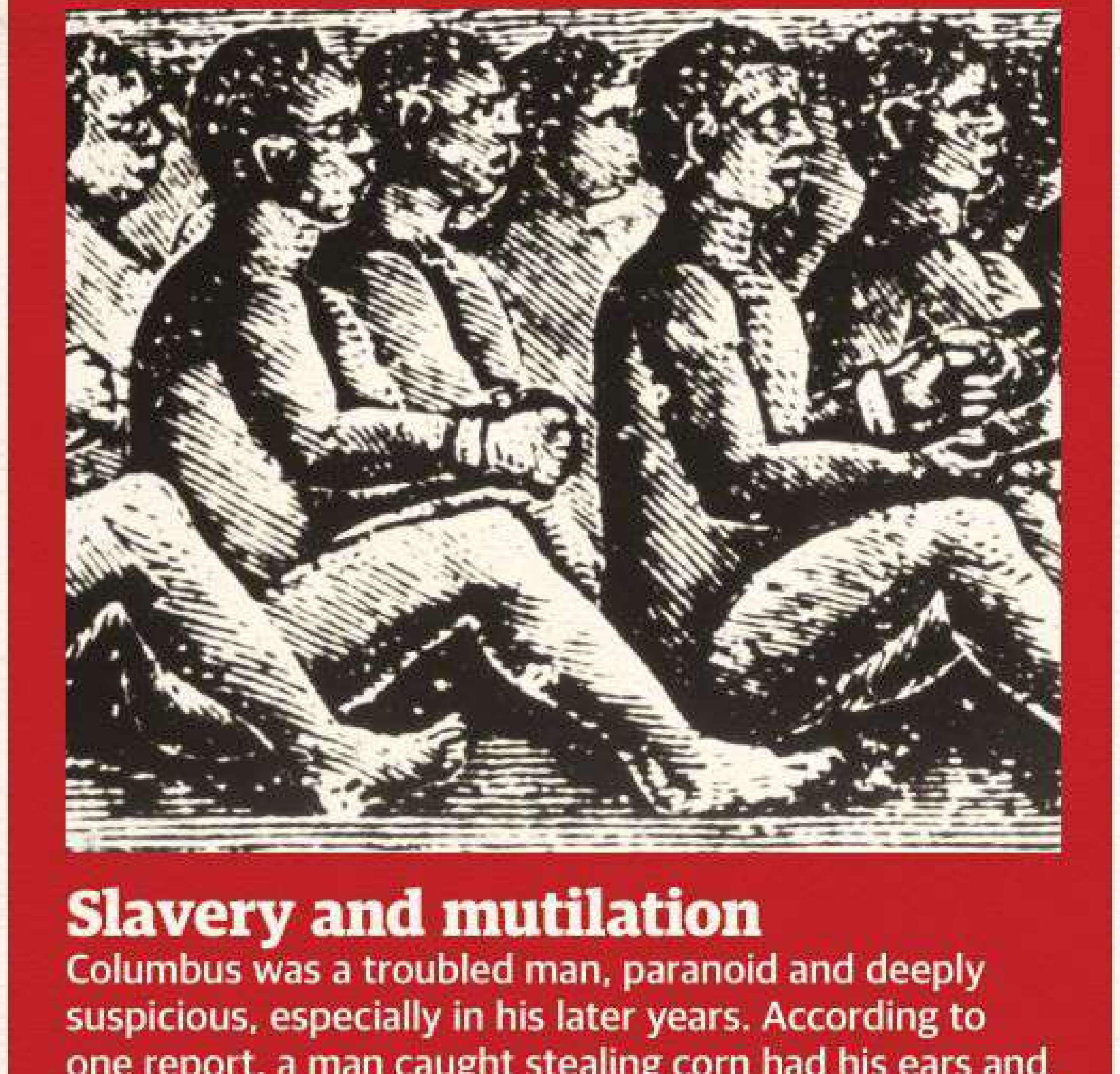
Public humiliation

Columbus and his like-minded brothers, Bartolomeo and Diego, were known for their psychological as well as physical torture. "Columbus' government was characterised by a form of tyranny", says Spanish historian Consuelo Varela. One such case involved a woman who dared to suggest Columbus was of lowly birth. Columbus' brother Bartolomeo had her stripped naked and paraded through the colony on the back of a mule. "Bartolomeo ordered that her tongue be cut out", adds Ms Varela. "Christopher congratulated him for defending the family."



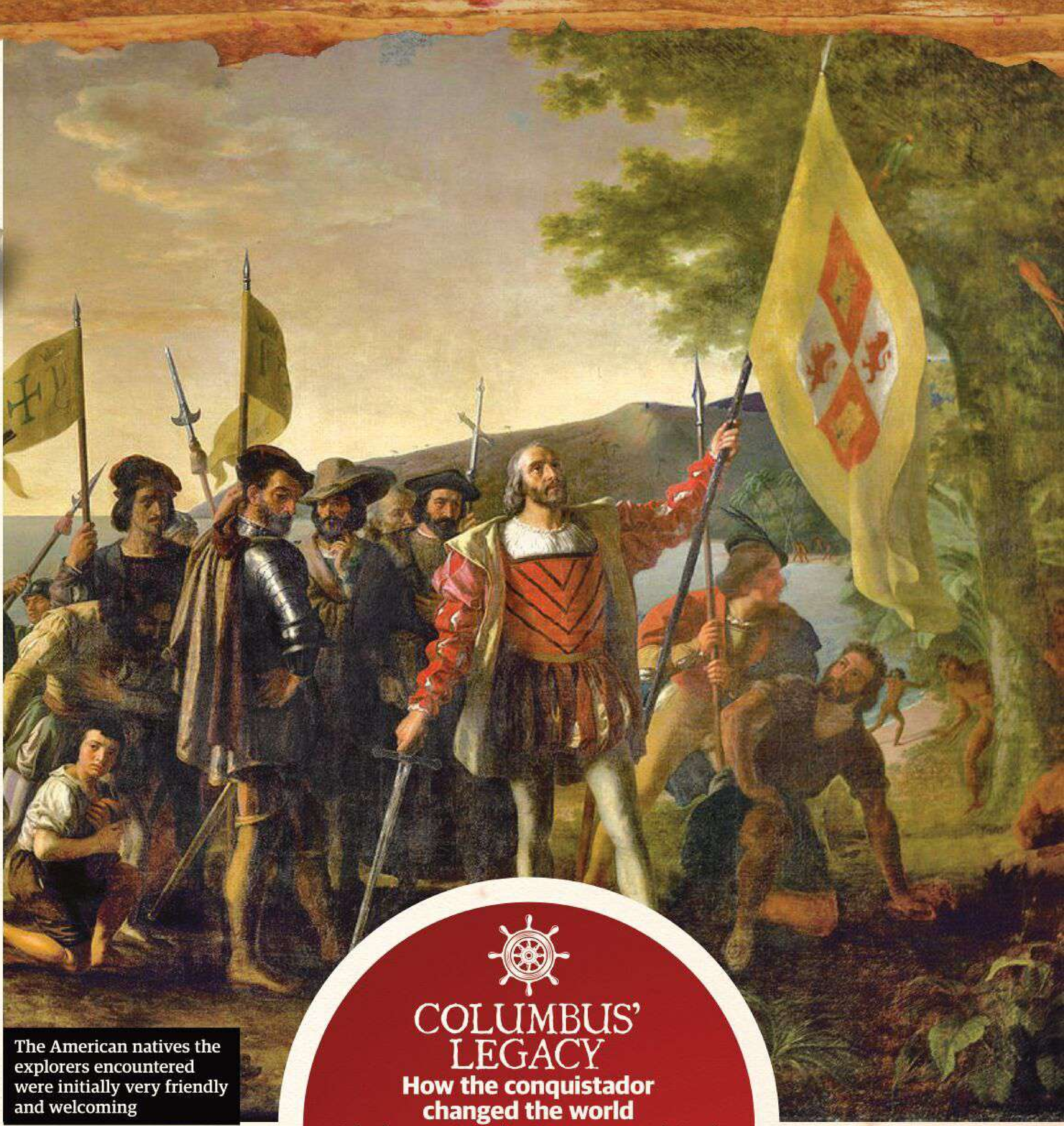
Worked into the ground

When Columbus arrived in the Bahamas in 1492, he discovered a number of peaceful native peoples, most notably the Taino tribe. Columbus himself remarked on how friendly these dark-skinned natives were – they carried few weapons either, since their society bred few if any criminals. He also discovered rich deposits of gold, so he claimed the land in the name of the Spanish Crown and enslaved that very tribe. Within two years, 125,000 – half the population – had died from working in Columbus' mines.



Slavery and mutilation

Columbus was a troubled man, paranoid and deeply suspicious, especially in his later years. According to one report, a man caught stealing corn had his ears and nose cut off at Columbus' request, before being sold into slavery. Enforced servitude became a common course of action for Columbus and his law-enforcing brothers. Columbus himself personally oversaw a sickening trade in sexual slavery, selling young Indian girls and women into a life of brutal prostitution.

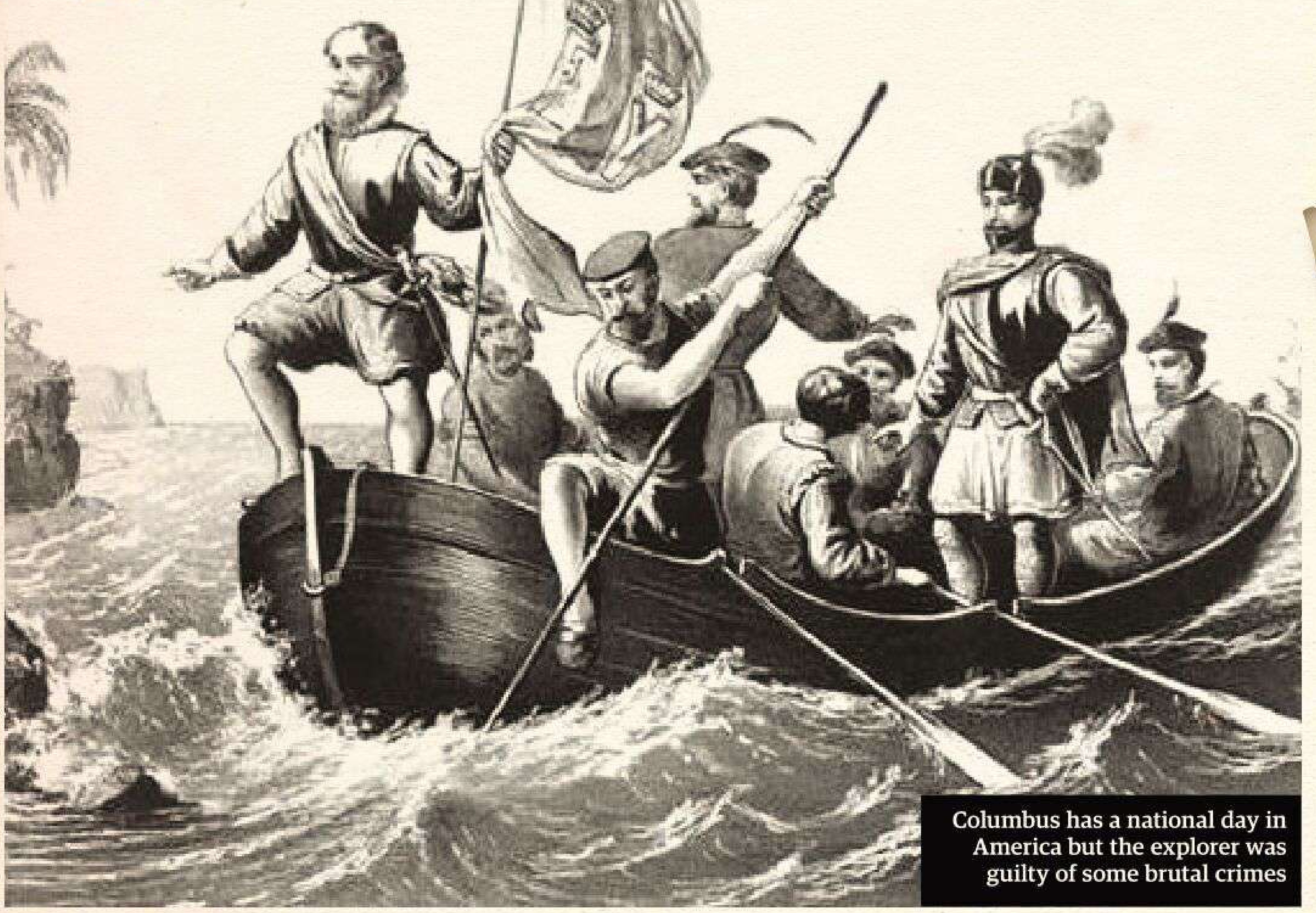


The American natives the explorers encountered were initially very friendly and welcoming

COLUMBUS' LEGACY

How the conquistador changed the world

Columbus wasn't the first European to reach North America, but his mark on the world is clear. To quote historian Martin Dugard: "Columbus' claim to fame isn't that he got there first – it's that he stayed." Unlike the small settlements the Vikings created 500 years earlier, Columbus claimed the lands he found in the name of Spain and created significant communities that continued to expand from the coast.



Columbus has a national day in America but the explorer was guilty of some brutal crimes

They had repaid him with a ruined settlement and countless butchered Spaniards.

In Columbus' absence, but very much following his direct orders, Hispaniola had quickly become a far-different place than the one they arrived at. The abundant and peaceful tribes of the island were happy to share the locations of the gold-rich valleys with their foreign guests, but they were less prepared for what came next. Bartolomeo Columbus forced thousands of the natives into slavery, making them dig mines into the mountains, scouring it for precious metals. Hundreds of Europeans brought with them a great number of Western diseases, and such viruses spread through the unprepared natives like wildfire. Such conditions had led the Taino people to lead a rebellion against the foreign invaders, but their actions only galvanised Columbus' own desire for order and retribution.

> "Columbus' seven-year rule had enslaved a majority of the island's native inhabitants, which had reduced a population of a few million to around 60,000 by 1500"

With his brothers at his side and his Spanish patrons none the wiser, Columbus carved untold riches from the heart of the land. Such riches kept the Spanish monarchs happy, but rumours of brutality would soon spill out across the waves, with reports that Columbus' governorship had sent him mad with power. While reports of his brutality were true, they were seized upon with gusto by the many enemies he had made at the Spanish court, who were jealous of the riches he was making. It is likely his Spanish patrons did indeed have some idea to the lengths Columbus was willing to go to seek his fortune in the New World. However brutal he might have been, his efforts were still filling the coffers of the Spanish crown at a time where war had drunk them dry.

Columbus would conduct a third voyage before Ferdinand and Isabella were forced to send an emissary to investigate the claims that hung thickly over the Spanish court. After receiving the report, they stripped Columbus of his titles and sent the administrator Francisco de Bobadilla to further investigate and govern in his stead. When Bobadilla arrived in August 1500, the land he found was certainly a startling one. Columbus' seven-year rule of the island had enslaved a majority of the island's native inhabitants, which had reduced a population of a few million free people to around 60,000 by 1500. He hears reports of Columbus selling young girls into sexual slavery and complaints that Columbus and his brothers would mutilate and humiliate anyone who stood in their way. The man who now has his own national holiday in the United States was eventually sent back to Spain in disgrace, but the Spanish monarchs did not imprison or hang him; stripping him of their patronage and his titles had nearly broken an already sick and ailing man.

Columbus' legacy is defined by his passion for discovery, but some modern accounts are perhaps quick to forget he was a conquistador by name and by nature. Driven by a desire to chart and define the New World, Columbus had not only discovered new lands, he had helped establish a Western footing that would continue to expand for hundreds of years. In his later years he wrote: "By prevailing over all obstacles and distractions, one may unfailingly arrive at his chosen goal or destination." While his actions will always have a shadow over them, his life-long desire to banish the unknown will ensure his name lives on forever.

THE VOYAGES IN NUMBERS

The shocking stats behind Columbus' conquistador career

3,700KM

The distance between the Canary Islands and Japan, according to Columbus' calculations

17

The number of ships, made up mostly of durable, long-distance-ready carrack-style vessels, Columbus used in his second voyage in 1493

19,600KM

The actual distance between the Canary Islands and Japan. Despite the advice of cartographers and geographers, Columbus would not be swayed on his own estimates

11

Number of combined years Columbus spent exploring, with his four main voyages for the mighty Spanish Crown

1,500

The total number of colonists (mainly Spanish, Portuguese and Italian) that Columbus drafted for his first-ever voyage across the Atlantic Ocean

29

During his third voyage in 1502, Columbus lost 29 of the 30 ships he set sail with, after getting caught in a violent storm off the coast of Santo Domingo

Day in the life

SAILOR FOR COLUMBUS

A seaman on Christopher Columbus's flagship voyaging to the new world

Atlantic Ocean, 1492

As a sailor heading towards the unknown Americas, there wouldn't have been any shortage of tasks, and the work would have been hard and, in many cases, perilous. They were exploring uncharted waters, and doing so in cramped conditions, with makeshift sleeping areas and bland provisions. The flagship of the expedition, the Santa Maria, ultimately didn't survive Columbus's first transatlantic voyage, as it ran aground off Haiti in December 1492 and was abandoned, but it nevertheless remains an emblem of the explorer's achievements and provides a fascinating case study into life aboard a 15th-century vessel.

BREAKFAST

Shortly before the first shift commenced, the crew would get up and eat breakfast. This was generally a cold meal, often consisting of salted fish, biscuits and some cheese (fresh food was usually eaten within the first week of the voyage, as it went stale quickly). Much of the food on the Santa Maria would have been pretty basic but healthy enough.

Salted fish was a staple on sea voyages because it kept for long periods

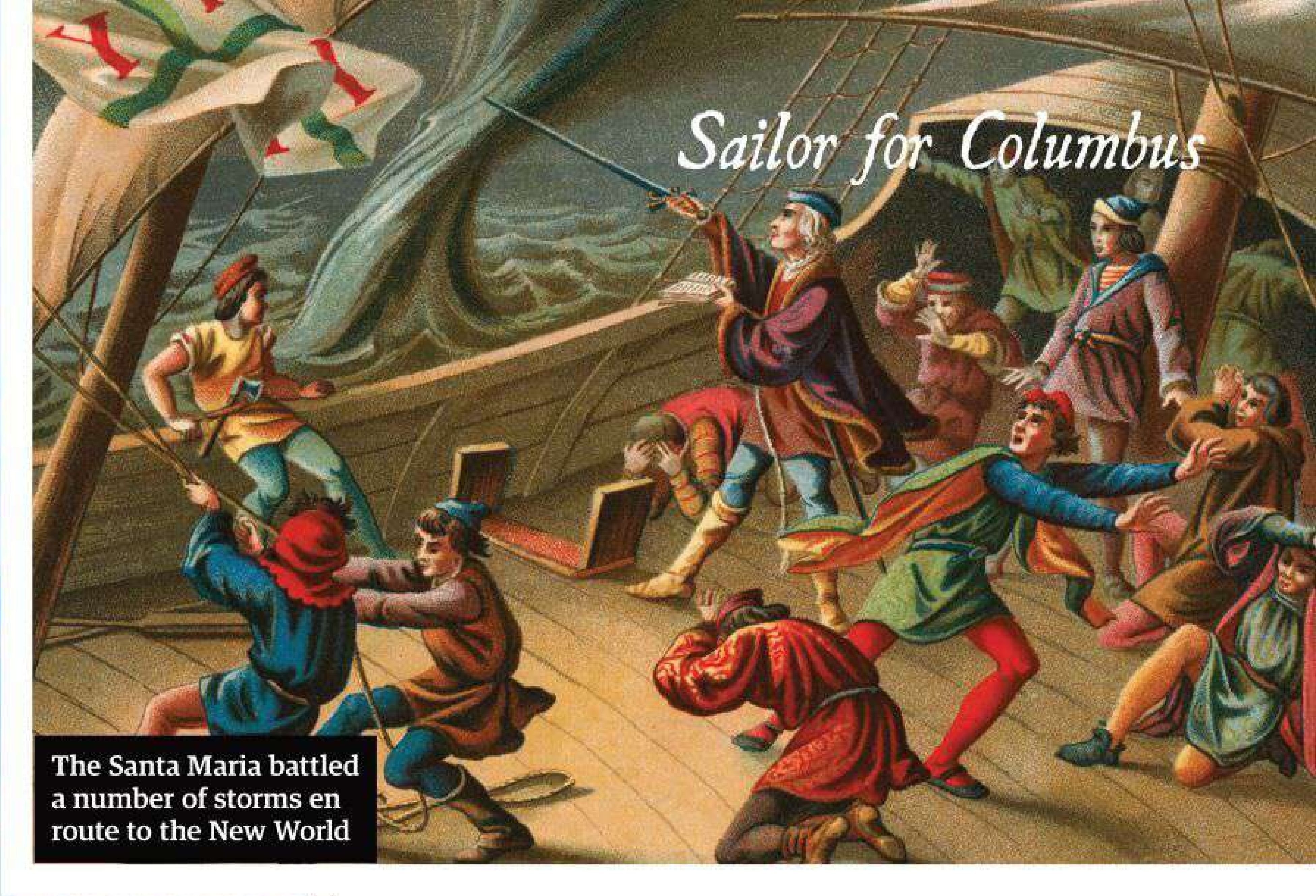
START OF SHIFT

The crew were divided into two watches, rotating every four hours. The first watch, known as the Cuartos, began at seven o'clock. Certain sailors were assigned specific roles: two men were posted on the bow and the round-top on the main mast; while another was charged with recording the compass direction and the ship's speed, as dictated by the Santa Maria's master or pilot.

SETTING THE SAILS

Part of the general duties for sailors on the first watch was to raise, lower and set the sails using the various lines, as well as carrying out general maintenance tasks on the relevant equipment as and when appropriate. It was common for them to sing as they went about their work in order to stick to a rhythm and keep up morale.

> "The majority of the crew would have to make do with any open space they could find [to sleep]"



The Santa Maria battled a number of storms en route to the New World

CLEARING THE DECK

In order to ensure the smooth running of the ship, sailors were also tasked with making sure the walkways and decks were clear at all times. Any debris left over from bad weather or maintenance had to be cleaned away, and the decks and rails had to be scrubbed at regular intervals.

END OF FIRST WATCH

The first watch ended, allowing the second watch – the Guardias – to begin. In the subsequent four hours the Cuartos watch were given a chance to socialise. Some of the activities they participated in included singing, dancing and playing musical instruments. Fishing was popular too because fresh fish was considered a great delicacy.

DOG WATCH

The shift between 5pm and 7pm was divided into two 'dog watches', effectively allowing the crews to switch over. This was done so as to ensure that the crews weren't constantly working the same shifts, and most pointedly to avoid always having to work the midnight 'graveyard watch' – traditionally an unpopular shift for obvious reasons.

TIME FOR PRAYER

Every 30 minutes, the ship's boy would turn the glass (which was shaped like an hourglass). While doing this he would sing a prayer, which as well as letting the crew know the time also acknowledged the Roman Catholic beliefs of the majority of the personnel. Specific prayers would be sung at certain times of the day; at sunset, the prayer was the Salve Regina (Hail Holy Queen), for instance.

SLEEP

Having completed their second shift, the majority of the crew would attempt to get some shut-eye in the few hours until they started work again. While Columbus and some of the other officers had their own quarters, the majority of the crew would have to make do with any open space they could find. Below deck was where the supplies and privies were located, so that area was generally avoided.

How do we know this?

The Santa Maria's journal kept a detailed account of the journey, of which a number of extracts written by Columbus biographer Bartolomé de Las Casas have survived. These focus more on distance covered and notable discoveries, but they nonetheless provide a valuable insight into what this voyage of discovery entailed. Also useful through the course of research for this article was the book *Christopher Columbus* by Ernle Bradford (1973).

ERNLE BRADFORD
Author of the Bestselling The Great Siege
CHRISTOPHER COLUMBUS

© Look and Learn

Vasco da Gama

Unlocking the World

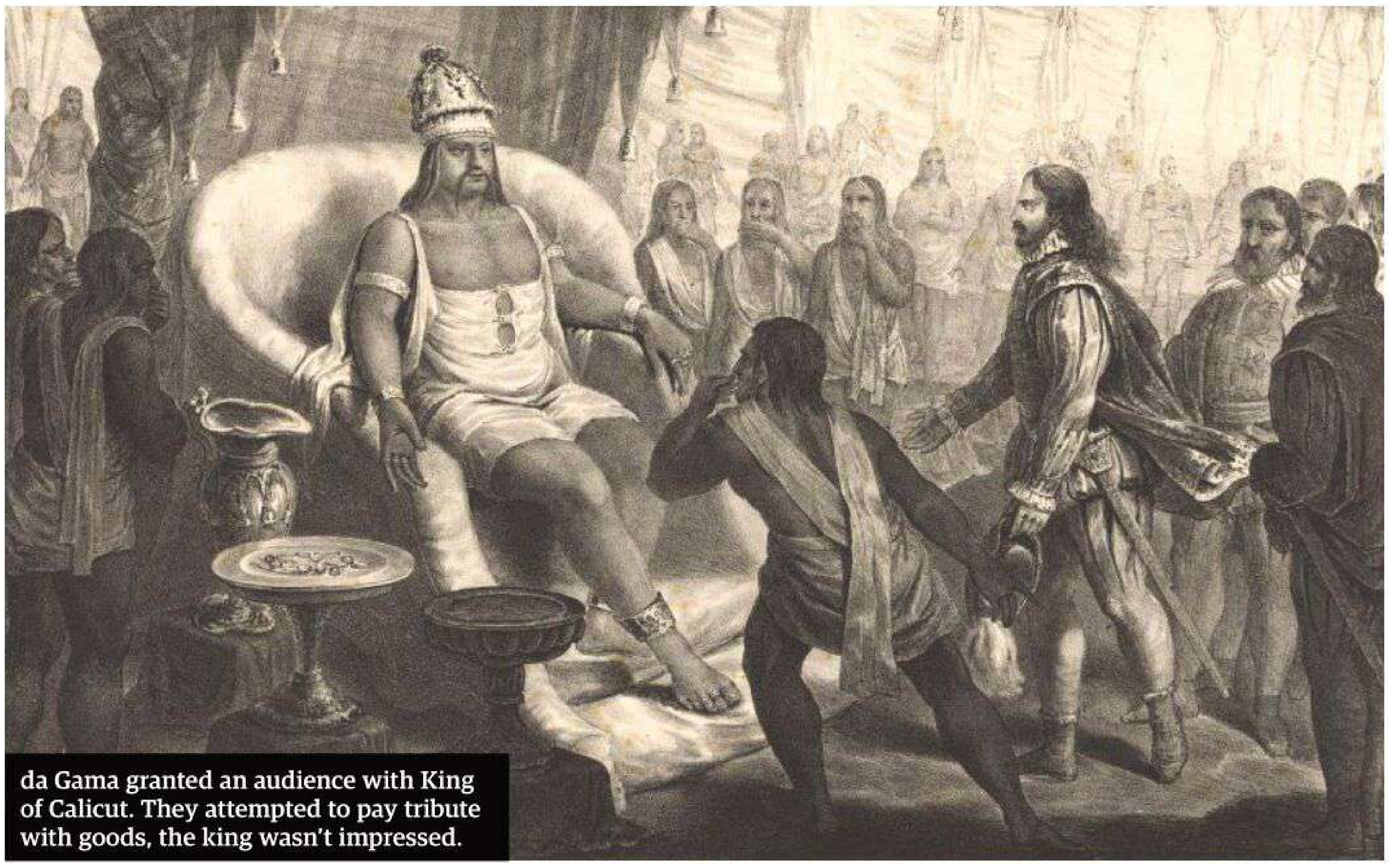
Vasco da Gama's 1497 voyage from Lisbon to India, via the Cape of Good Hope, changed the world and dispelled centuries-old myths

The backdrop to Vasco da Gama's historic journey to India in 1497 is fascinating. Little Portugal, the small nation on the very edge of the Iberian Peninsula, situated as if cast out to the outer fringes of Western Europe - both literally and figuratively - would go on to change the course of world history with their experimental 15th century voyages down the coast of west Africa and eventually around the Cape of Good Hope (they originally named it 'Cape of Storms').

The country had a deep seated desire to punch above its weight and was ruthlessly ambitious, thanks to a succession of monarchs who believed very much in their own manifest destinies and sense of awesomeness. Portugal was also locked in a rivalry with its wealthier neighbour, Spain. The race to build an empire intensified when Italian explorer Christopher Columbus - whom they'd turned away previously when he asked them to support a venture - sailed into port one day with news he'd discovered a route west to the Indies (he'd discovered the Caribbean). It was time for them to get serious. Yet Portugal's progression as a seafaring powerhouse had been taken in incremental steps. Throughout the 15th century, they made a series of key discoveries - navigational and geographic - and Lisbon became a multicultural hub. Astronomers, cartographers, mathematicians and merchants were all flocking to the exciting city.

With the North Atlantic right on their doorstep, Portugal's geographic location, even if they felt isolated from larger events in Europe at the time, became a positive. From 1415 onwards, first under the auspice of Prince Henry (known as Henry the Navigator), Portugal found and named the Azores and the Cape Verde Islands. These places served as bases for further explorations into the high seas. The Portuguese were expert sailors and master boat builders, too. These jaunts into points unknown were made in two or three caravels (vessels with triangular lateen sails) and they became focused on searching for a way to the Indies (meaning India and the Indian Ocean) via Africa.

For decades, the Portuguese had made their way down Africa's coastline, planting stone pillars as markers along headlands, all the while in search of a passage to the other side of the continent. They sailed down the Senegal River, the Congo River and other exotic locations until they could travel no further. By the end of the 15th century, they still hadn't found a way west to east Africa. On one trip,



da Gama granted an audience with King of Calicut. They attempted to pay tribute with goods, the king wasn't impressed.

Defining moment

Beginning the journey
On the eve of departure, Gama and his fellow voyagers proceeded down to the beach and point of departure by candlelight, priests and monks chanting as they went. The gathered crowd wept and family members waded into the water to bid adieus. Confession was taken and the crew was taken in small boats to the awaiting ships.

8 July 1497

VASCO DA GAMA

C. 1460-1524

Brief Bio

Born in Sines, south west Portugal, Vasco da Gama's expeditions to India were part of his homeland's expansionist, empire-building plans. For his successful endeavours, he was appointed Viceroy of India. He died in the port city of Cochin (Kochi), after contracting malaria, three months upon arrival, on 24 December 1524.

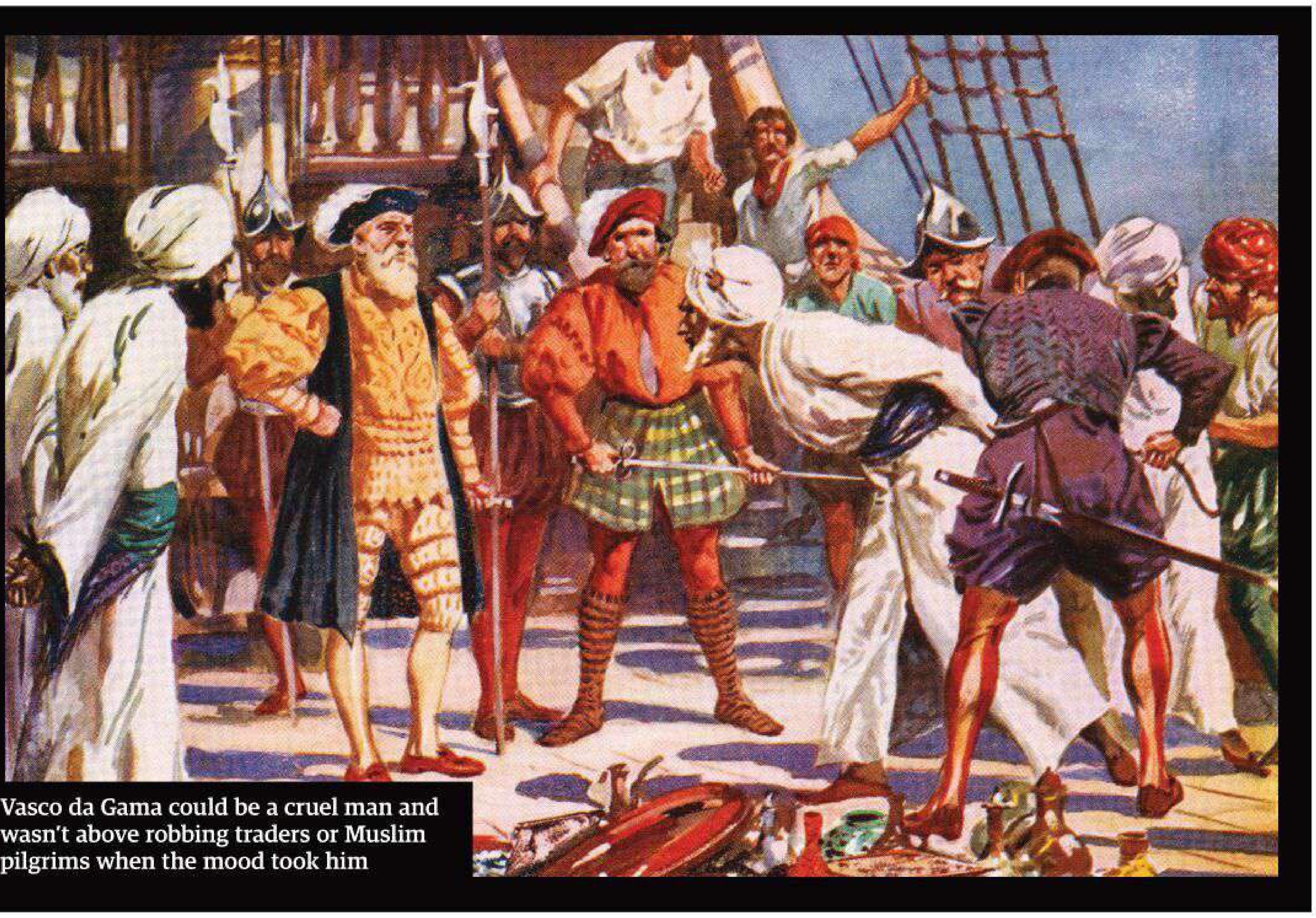
The pilgrim incident

Vasco da Gama's aggressive tactics led to an infamous and completely unnecessary act of barbarism. On his second voyage to India, the fourth armada in 1502, this time pumped up by honours bestowed upon him by the King of Portugal, he was up for a fight.

Gama's virulent anti-Muslim sentiment was born of a general hatred of Muslims by Christians and his experiences in the Indian Ocean. He considered that rule by fear and the sword was the best policy to subjugate people. Boats carrying pilgrims to Mecca and back were considered fair game for plunder.

On 29 September 1502, pilgrim vessel, Miri, came into view. Returning from the Red Sea with hundreds of men, women and children, Gama ordered an attack for reasons only known to him. At first Miri's crew and passengers put up no resistance. They assumed – quite wrongly – negotiation was on the cards.

Disabling the ship, Gama let it drift for five days before locking passengers inside, sealing all exits, setting the ship on fire and then watching in perverse pleasure as they all burned to death. He captured 20 children and ordered them to convert to Christianity. This egregious monstrousness mystified and repulsed da Gama's crew.



Vasco da Gama could be a cruel man and wasn't above robbing traders or Muslim pilgrims when the mood took him

they reached as far as Angola and planted a marker with these words: "In the era of 6681 years from the creation of the world, 1482 years since the birth of our Lord Jesus, the most High and Excellent and Mighty Prince, King D João II of Portugal, sent Diogo Cão squire of his House to discover this land and plant these pillars."

In 1488, Bartolomeu Dias and his crew sailed further than any man had gone before. They rounded the Cape of Good Hope before turning back (they were too scared and weak to carry on). Having proved there was very possibly a sea route to the Indian Ocean via Africa, there wasn't a mad rush. It would be nine years before the next flotilla took off.

Since the Middle Ages, there had been stories of a Christian king who lived in Africa. Tradition named 'Prester John' (John the Priest). The Ethiopian kings, who were Christians, fed into the Prester John figure of mythology. A major factor in Portuguese designs on the Indian Ocean was religious: they hated Islam and Muslims. Unlike their neighbours to the east, they'd kicked out the Moors as a presence in their land earlier. They also believed that, in building an alliance with Prester John, they could dominate trade and take it away from the Muslims. It was as much ideological as it was economical.

A vital event in the lead up to da Gama's mission was the Treaty of Tordesillas (1494). Mediated by Pope Alexander VI, the treaty essentially split the known world in two. The Spanish got everything to the west and the Portuguese everything to the east and south. The meridian line demarked in the middle of the Atlantic Ocean was a complicated affair, as it distinguished in leagues and not degrees (but it meant the Portuguese could claim Brazil when they accidentally discovered it in 1500, when Capitão-mor (captain-major) Pedro Álvares Cabral came across it when performing the 'volta da mar' (turning of the sea) manoeuvre on his voyage to, you guessed it, India.

Defining moment

Bold seafaring

After leaving the Cape Verde Islands, the flotilla pull a manoeuvre which has gone down in history. Instead of following the west African coast, they swing out into the southern Atlantic to catch the winds and hopefully round the Cape of Good Hope into the Indian Ocean. 93 days later, they sighted land, just north of the Cape itself.

August 1497

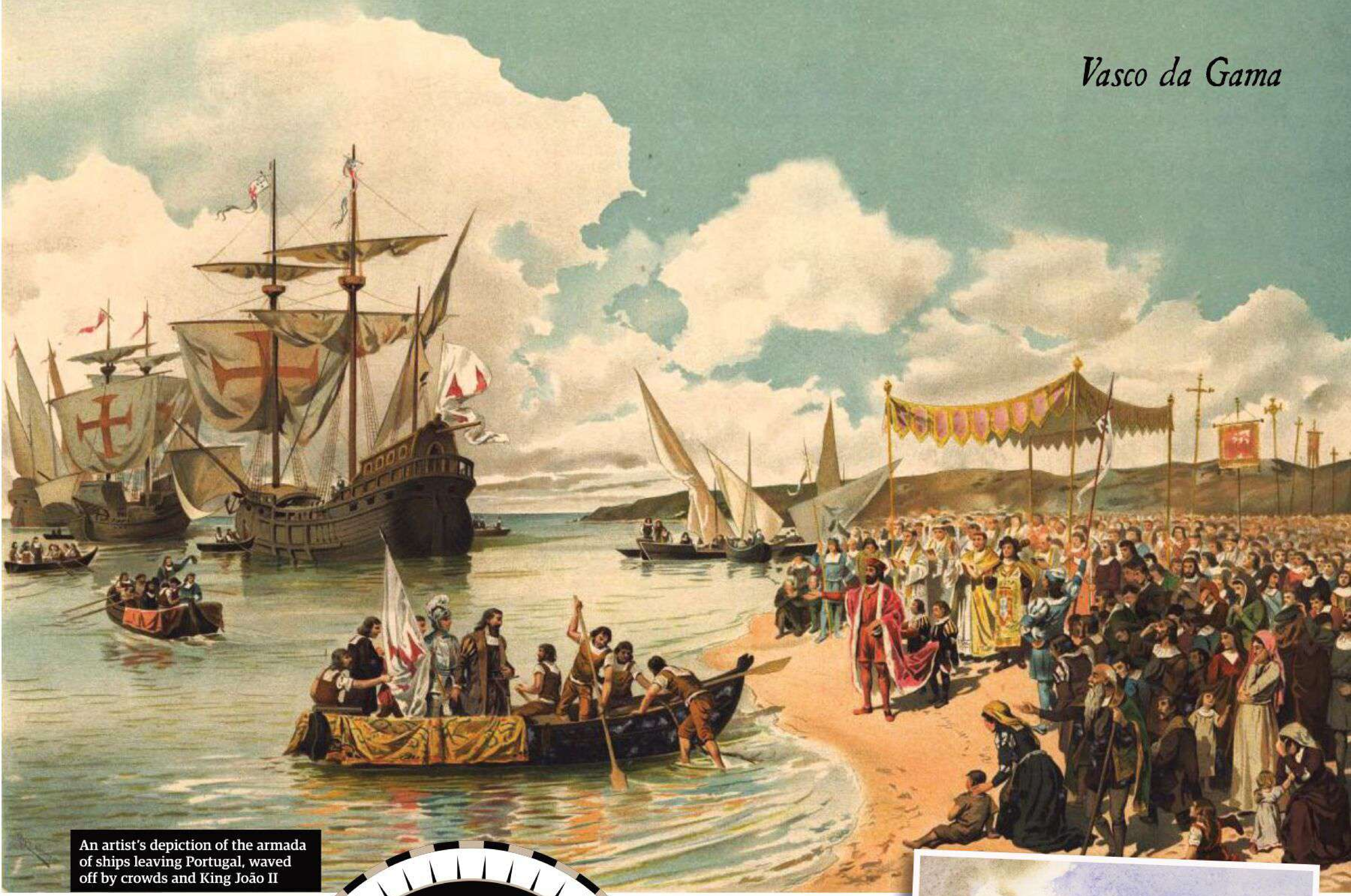
The Portuguese built deep-hulled vessels not quite right for exploration purposes, so when Vasco da Gama set off on his trip to discover the sea route to India on 8 July 1497, three smaller boats were used in addition to a supply ship. da Gama captained São Gabriel, a carrack. His brother, Paulo da Gama, commanded São Rafael. A caravel, Berrio, was the smallest of the trio, and was captained by Nicolau Coelho.

Vasco da Gama's selection to lead the mission is obscured by history. It looks, though, as if he was the second choice. King Manuel asked his brother, Paulo, to make the journey, but declined due to ill health. While Paulo wouldn't command the flotilla, he did join it. da Gama, a minor nobleman from Sines, must have had extensive seafaring knowledge and experience to be appointed the captain-major. A hard personality in possession of a violent temper – he'd sure keep the crew in check – such attributes must have come into play. This was a job for a tough guy. Yet da Gama's propensity for foul moods and errors in judgement led to massacres, reprise killings and mayhem, once Portugal got their hooks into Indian Ocean trade.

Summer 1497, the ships made for the Cape Verde Islands in favourable winds and landed 14 days later. From there, they sailed south west and used the same volta do mar navigational technique as Dias. It took them three days to edge down the coast and tackle the Cape. There were several occasions, too, where they met natives, some wary, some friendly. Beyond them now lay terra incognita. Da Gama named the coastal region 'Natal' having passed it on Christmas Day 1497.

At Mozambique, they discovered Arab ships, traders, and were amazed to meet Arabs who could speak Castilian. The world they sailed into was much more forward-thinking than Europe. The seas served as gateways to nations. Multiculturalism and social interactions thrived. It wasn't a paradise – far from it – there were warring sultans and rivalries, but the trade network between coastal cities and continents (Africa and Asia) was sophisticated compared to Europe. It

The tomb of Vasco da Gama at the Church of Santa Engrácia in Lisbon, Portugal



An artist's depiction of the armada of ships leaving Portugal, waved off by crowds and King João II

wasn't too long, either, that da Gama noticed how their ships were weakened by lack of proper defences. They were, therefore, ripe for the taking.

Vasco da Gama's deeply suspicious nature and propensity to aggression set the standard for nearly all subsequent dealings with people he met. The captain-major acted cautiously always, but his inability to read other people and their motives led to misunderstandings, discourteous behaviour and often carnage. He tortured locals for information, took hostages and survived several skirmishes with tribesmen. On one occasion, their paranoia was justified. The Portuguese found a group of men attempting to board the ship in the dead of night. It is during this time, too, that da Gama met 'tawny men' he took to be Christians (they were Hindus).

Peak insolence was evident in the series of frustrating meetings with the samudri of Calicut, whom they met having finally crossed the Indian Ocean to India. da Gama disobeyed local customs; tax customs in port; refused to leave the ship because he feared Muslim traders were conspiring against him (he was right on that score); demanded an audience with the samudri on his terms alone; offered gifts (shirts, trinkets) the samudri found insulting and which his courtiers laughed at; and finally sailed away with an armada of Muslim ships hot on his tail. History was made, friends were not.

The Portuguese seized the Indian Ocean, thanks to Vasco da Gama's voyage. Like a threat made in a fit of anger, da Gama promised the Indians he'd be back. Revenge and subjugation on the cards. He was right about that, too. Portugal became the first globe-spanning maritime empire and managed to pip their neighbours Spain to the spice trade in the east. The world would never be the same again. The age of global business and European dominance of faraway foreign lands – colonialism – had well and truly begun.

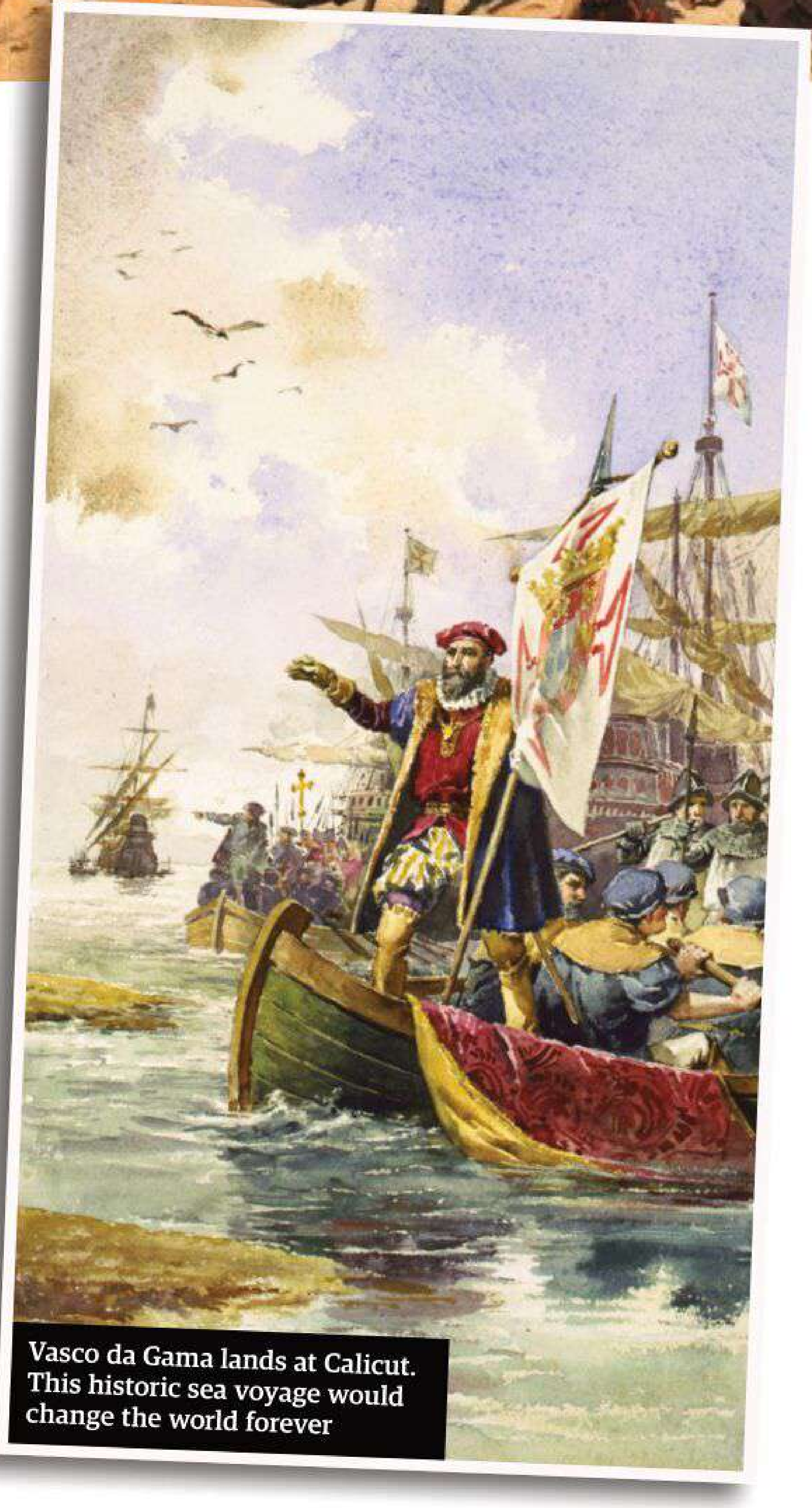
Defining moment

First sight of India

Over 300 days after leaving Lisbon and having made stops along the east African coast, da Gama's flotilla crossed the Indian Ocean with a Muslim pilot they'd captured. They arrived in monsoon season. As they passed through fog and heavy cloud, the Portuguese explorer and his crew spied high mountains. They were in India.

18 May 1498

"His inability to read other people and their motives led to misunderstandings"



Vasco da Gama lands at Calicut. This historic sea voyage would change the world forever

Vasco Núñez de Balboa

Lord of the Other Sea

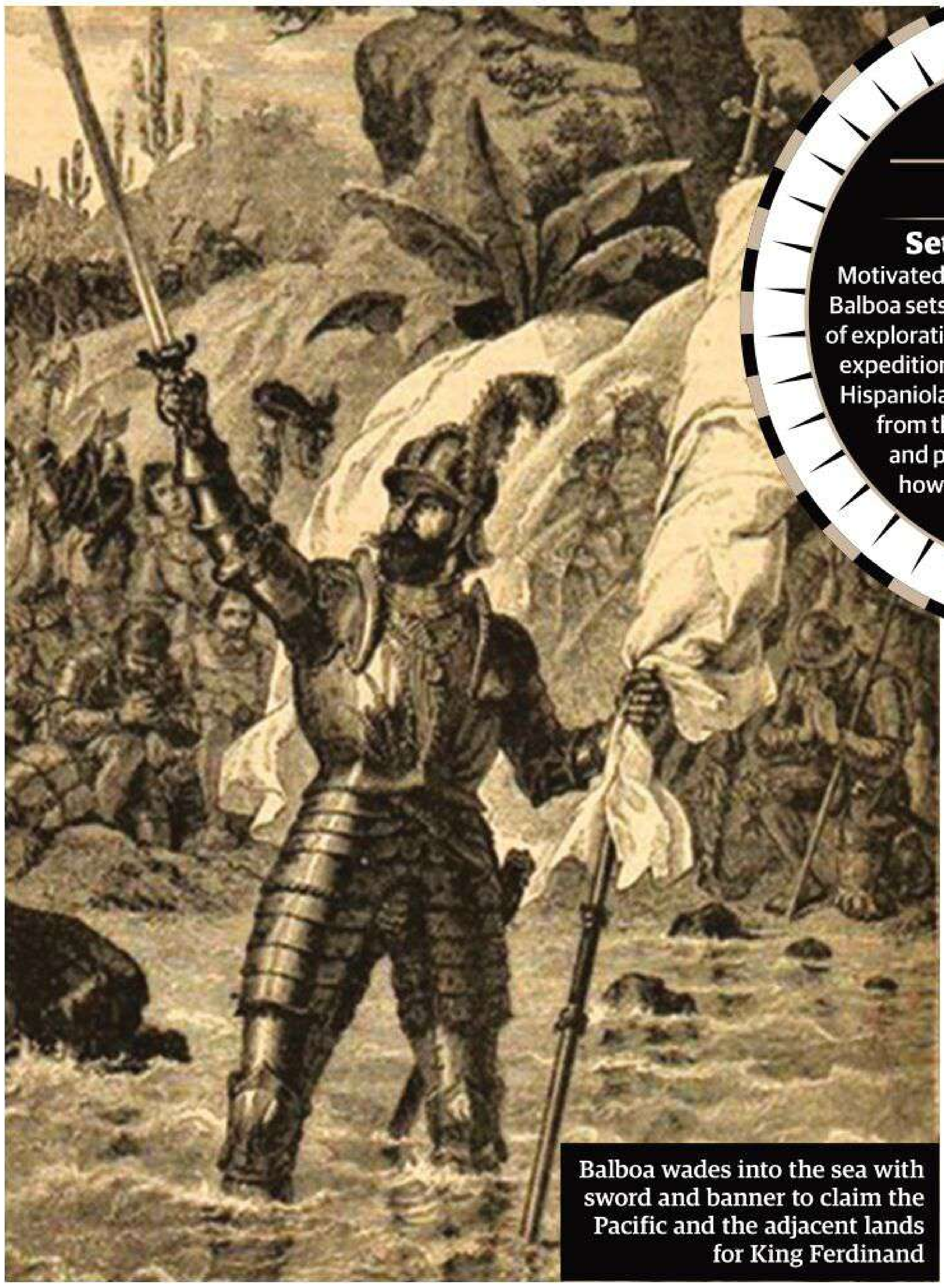
This capable and courageous explorer became the first European to cross the American continent and clap eyes upon the Pacific Ocean, thereby expanding his nation's conquest of the New World

It was the son of a native Indian chief called Comogre who sparked what would prove one of the most pivotal moments in the Spanish conquest of the New World. The young man was sitting with his father outside his family's abode while Spaniards under the command of Vasco Núñez de Balboa were weighing gold levied from the local tribes.

As the Spaniards began to squabble over each man's allocation, Comogre's son, irritated by the Spaniard's avarice, struck the scales and scattered the gold on the ground. He told the Spanish that if they travelled south they would come across "the Other Sea", what we now call the Pacific, and there they would find all the precious metal they could imagine, for these lands were as rich in gold as Spain was in iron.

Ever the courageous adventurer, Balboa took heed. He was told that he would need at least 1,000 men to conquer these lands and with such a force assembled on 1 September 1513, he set sail from his base at Santa Mariá la Antigua and voyaged west to the narrowest part of the Isthmus of Panama.

Here the isthmus was just 60 miles wide, although every inch was a swamp or river or a tangled mass of hills. Food supplies were as scarce as the hostile tribes were plentiful. Still, with a host of native attendants and guides, and a little under 200 Spanish comrades, he set out on the march south across the isthmus. As the adventurers reached their journey's end it is said that Balboa took the final steps alone, climbing a summit to gaze down on the Other Sea.



Balboa wades into the sea with sword and banner to claim the Pacific and the adjacent lands for King Ferdinand

Defining moment

Settling on Hispaniola

Motivated by the achievements of Columbus Balboa sets sail on Rodrigo de Bastidas' voyage of exploration along the coast of Colombia. The expedition eventually settles on the island of Hispaniola and in 1505 Balboa uses his spoils from the voyage to set up as a planter and pig farmer. His endeavours fail, however, and he ends up in debt.

1500-1505

VASCO NÚÑEZ DE BALBOA

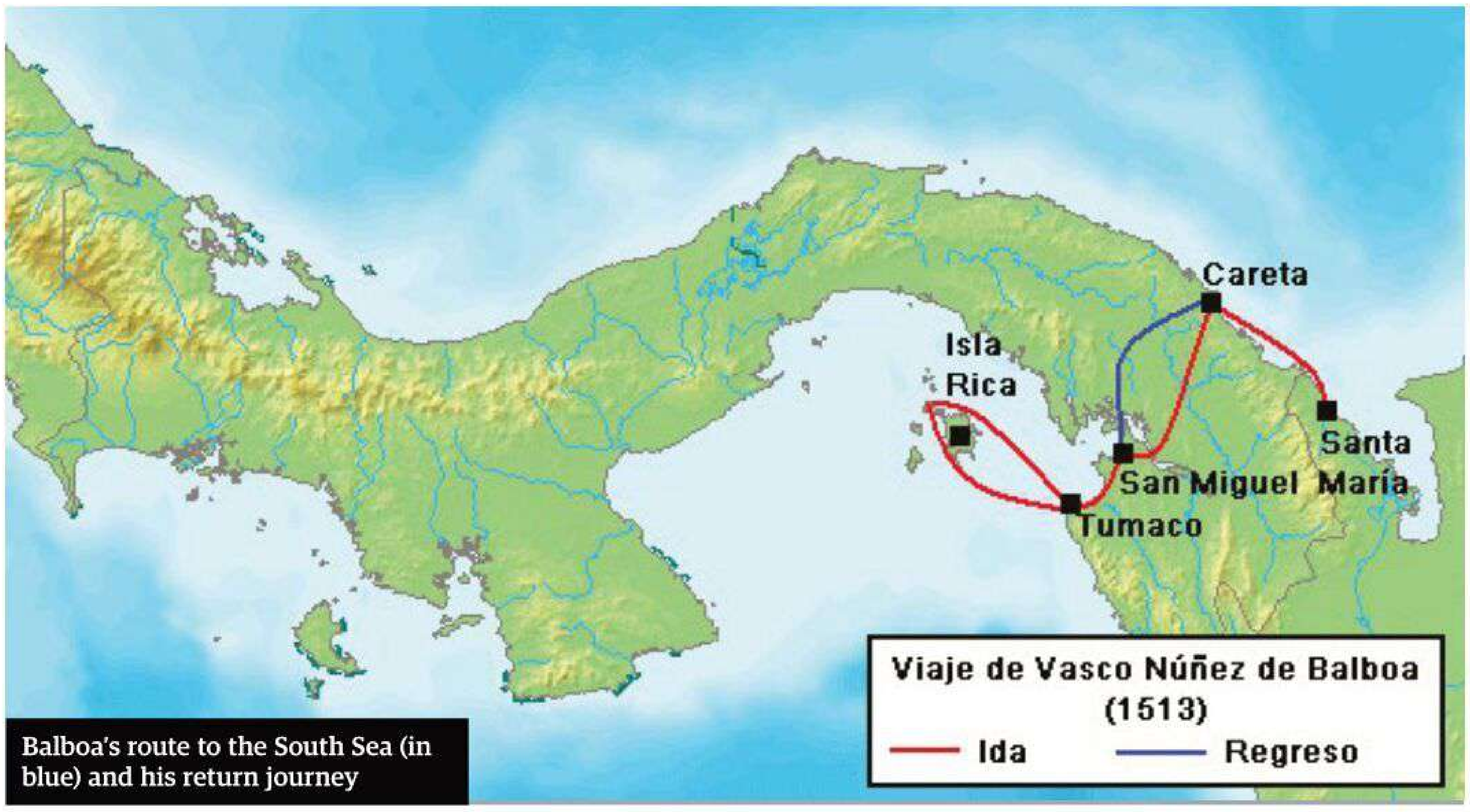
c.1475-1519

Brief Bio

Born in Castile, Spain in 1475, Vasco Núñez de Balboa was a conquistador and an explorer, who headed the first stable settlement on the South American continent, Santa Mariá la Antigua, before going on to become the first European to ever cross the Isthmus of Panama from the New World and to set eyes upon the Pacific Ocean.

Vasco Núñez de Balboa

Balboa's discovery opened up the western coast of the Americas



Balboa's route to the South Sea (in blue) and his return journey

It was 25 September 1513, and the Spaniards had discovered a route across the New World to the Pacific Ocean. Just 21 years after Columbus's landfall, Balboa had struck the second great landmark in the history of the conquistadors – for his discovery opened up the western coast of the continent and provided the pathway to the dizzying, unimaginable wealth of the Incan empire.

After cutting boughs as tokens of possession and carving the name of King Ferdinand on the trees, Balboa descended into the Bay of San Miguel where he waded into the sea with sword and banner, raising forth his monarch's flag and claiming sovereignty for his king over the sea and the adjacent provinces.

Defining moment

Blaboa is made governor

Balboa founds the first permanent settlement on mainland South American soil, and names it Santa María la Antigua del Darién. A little over a year later, King Ferdinand names him interim governor and captain general of Darién, an appointment he earns through the collection of vast riches for the crown.

September 1510

> "Balboa, at 35 years of age, showed significant qualities as a leader of men"

With little risk, Balboa's party then took to the ocean in fragile canoes, discovering a great pearl fishery. The largest and most beautiful pearls Balboa despatched to his king, along with a stash of gold and news of his great discovery. Unfortunately for this intrepid subject, the messengers arrived in Spain too late to prevent what would, eventually, lead to his tragic and brutal end.

Balboa had arrived in the New World after setting sail in 1500. He first tried his hand as a farmer on the island of Hispaniola (modern-day Haiti), though he failed and ran up large debts. To escape his creditors, in 1509 he stowed away on an expedition organised by Martín Fernández de Enciso which was to bring aid and reinforcements to a Spanish colony on the coast of Urabá, in modern Colombia.

The relief party arrived to find a colony dwindling amid an inhospitable environment beset by hardships, not least aggressive natives who favoured poisoned arrows. The colony's founder, Alonso de Ojeda, had suffered an ambush and had been shot through the leg with a poisoned arrow. He survived this potentially fatal wound by binding two red-hot metal plates to the wound. When Enciso's relief party arrived they found among the bedraggled colonists one Francisco Pizzaro, a man who would go on to play such a prominent role in the history of this continent.

It was Enciso who now took command though by all accounts he proved a feeble captain, ill suited to manage the many crises thrown up by such a dangerous landscape. Balboa, however, at 35 years of age showed significant qualities as a leader of men. It was on Balboa's prompting that the colonists decamped and moved to Darién on the less hostile coast of the Isthmus of Panama. Here they founded Santa Mariá la Antigua, the first stable settlement on the entire continent.

The colonists soon found reason to depose the ineffectual Enciso and they elected a town council instead, naming Balboa as one of its two magistrates. With the subsequent departure of Enciso for Hispaniola and then on to Spain, Balboa became the undisputed head of the colony. In December 1511 King Ferdinand II of Aragon

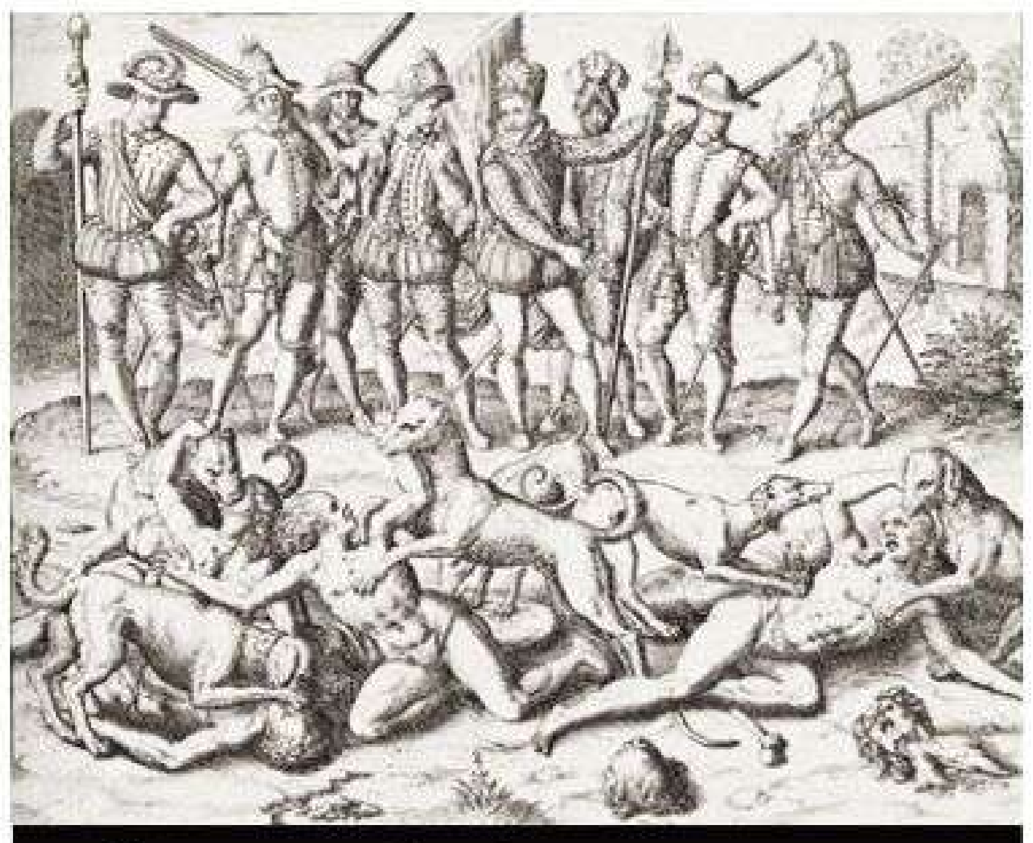
The monument to Balboa stands in Panama City, where the explorer is regarded by many as a national icon

Cruel justice

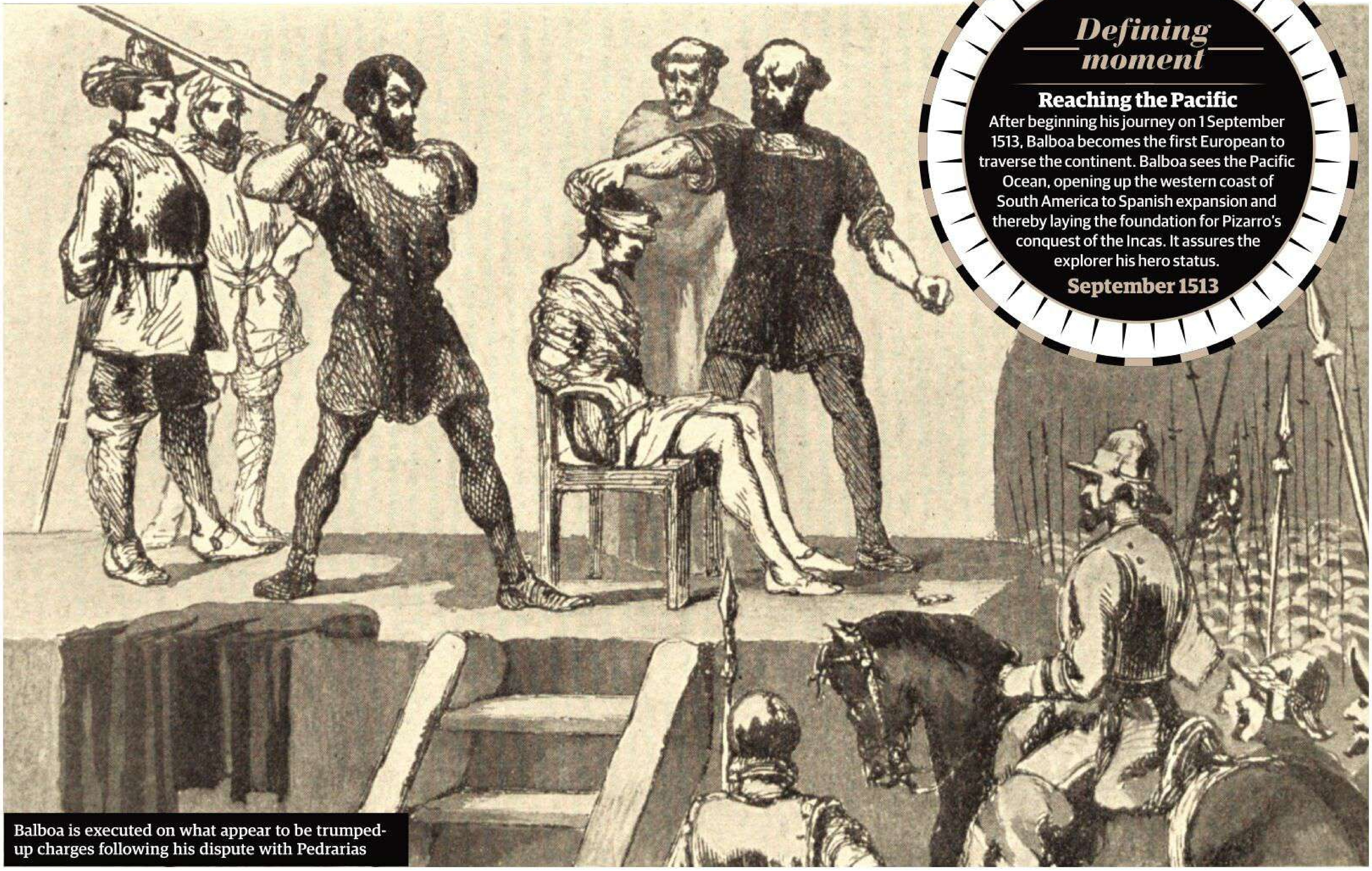
Though far more clement in his dealings with the native tribes than so many of the conquistadors that followed, Vasco Núñez de Balboa was no stranger to brutality when he deemed it necessary.

Peter Martyr d'Anghiera in his book *On the New World*, published in 1530, recites one lurid incident where Balboa feeds 40 homosexual men to his dogs. Balboa, he writes, was upset with young native men of high standing who dressed effeminately with women's clothing and went "too far with unnatural acts". The writer claims that the majority of natives supported Balboa's indignation as "the indigenous people knew that sodomy gravely offended God". And that it was such behaviours that "provoked the floods and tempests, thunder and lightning, so frequently afflicted them."

The Spaniards' use of dogs in the New World was widespread. Balboa's own hound was called Leoncillo. This animal is said to have had a proven record as a tracker of runaway slaves who he would lead back to Balboa, unless they resisted, in which case he would tear them to pieces. Leoncillo, it is written, received "an archer's share" of all spoils and won for his master much gold and many slaves.



Balboa setting his dogs upon native practitioners of homosexuality



Balboa is executed on what appear to be trumped-up charges following his dispute with Pedrarias

Defining moment

Reaching the Pacific

After beginning his journey on 1 September 1513, Balboa becomes the first European to traverse the continent. Balboa sees the Pacific Ocean, opening up the western coast of South America to Spanish expansion and thereby laying the foundation for Pizarro's conquest of the Incas. It assures the explorer his hero status.

September 1513

and Castile sent orders declaring Balboa interim governor and captain general of Darién.

In the words of the contemporaneous Italian writer Peter Martyr of Angleria, Balboa had transformed himself from "a rash roysterer to a politic and discreet captain". He certainly proved an effective leader and over the native tribes he gained ascendancy by a rash of different means, both malevolent and benign.

His diplomacy was sound and he often worked toward conciliation. He struck up a relationship with the daughter of a local chief called Careta and helped the latter defeat his enemies, thereby securing valuable allies that he employed to assert his hegemony. It is even said that both Careta and the chief Comogre accepted baptism into the Christian faith.

As governor, Balboa obtained both subjects and slaves, and through coercion and tribute collected barrels full of gold that he sent back to his king. He sent letters, too, and in one such missive from 1515 he describes his own clemency and fair dealing, drawing a stern comparison with other Spanish captains who he regards as brutal and cruel.

Of course, these were brutal times and any European would be familiar with violent practice back home where hanging, flogging, mutilation, burning at the stake and quartering were all matters of public spectacle. Hence, even a man like Balboa, who favoured diplomacy and more gentle forms of pacification, was not averse to violence.

His attitude to homosexuality among certain natives provoked a severe response, and he writes that one tribe who lived as cannibals should be burnt to death as they were unfit to be considered even as slaves. His pragmatism was often harsh and he split up families and peoples, swapping slaves between Darién and the Antilles, so that the displaced would not be able to flee into familiar environments and hide there.

Given the nature of the times, it is perhaps not surprising that his own life should come to a violent end. And it was Enciso, who he had replaced as the leader of the Darién colonists, who indirectly brought about his downfall.

For when the messengers that Balboa dispatched to announce his discovery of the 'Other Sea' arrived at King Ferdinand's court, Enciso had already returned and related to the king a damning account of Balboa's actions during their time together – decrying him as a stowaway and a usurper. The king had therefore announced a new governor of Darién, Pedro Arias de Avila, more commonly known as Pedrarias.

Yet Ferdinand was impressed with Balboa's news and though he did not demote Pedrarias, he appointed Balboa as Adelantado of the South Sea and governor of two minor provinces contained therein. For five years Balboa and Pedrarias maintained cordiality – Pedrarias even betrothed his absent daughter to Balboa – though mistrust and malevolence simmered.

Balboa's grievances centred on Pedrarias's attitudes to the natives, which he considered far crueller than his own, and wrote to the king bemoaning Pedrarias's captains who were undoing his hard-won alliances with local tribes.

Balboa's complaints were effective and as he prepared a fleet to further explore the Pacific coast – comprising four brigantines that were transported in pieces across the mountains to the Pacific shore – news arrived in Darién of the king's decision to replace Pedrarias. Concerned perhaps over the damning evidence Balboa might give in any legal action, or inspired by vengeance, Pedrarias recalled Balboa to Darién where he was arrested on charges of treason.

A trial ensued, presided over by Gaspar de Espinosa, Pedrarias's chief justice, and Balboa was found guilty despite the paucity of credible evidence. He was condemned to death, and beheaded in January 1519. Though he was no stranger to cruelty, Balboa was perhaps made of nobler stuff than the conquistadors that followed. Had he and not Pizarro carried out the conquest of the Incas, that once mighty civilisation may well have suffered less pain and humiliation.

Juan Ponce de León

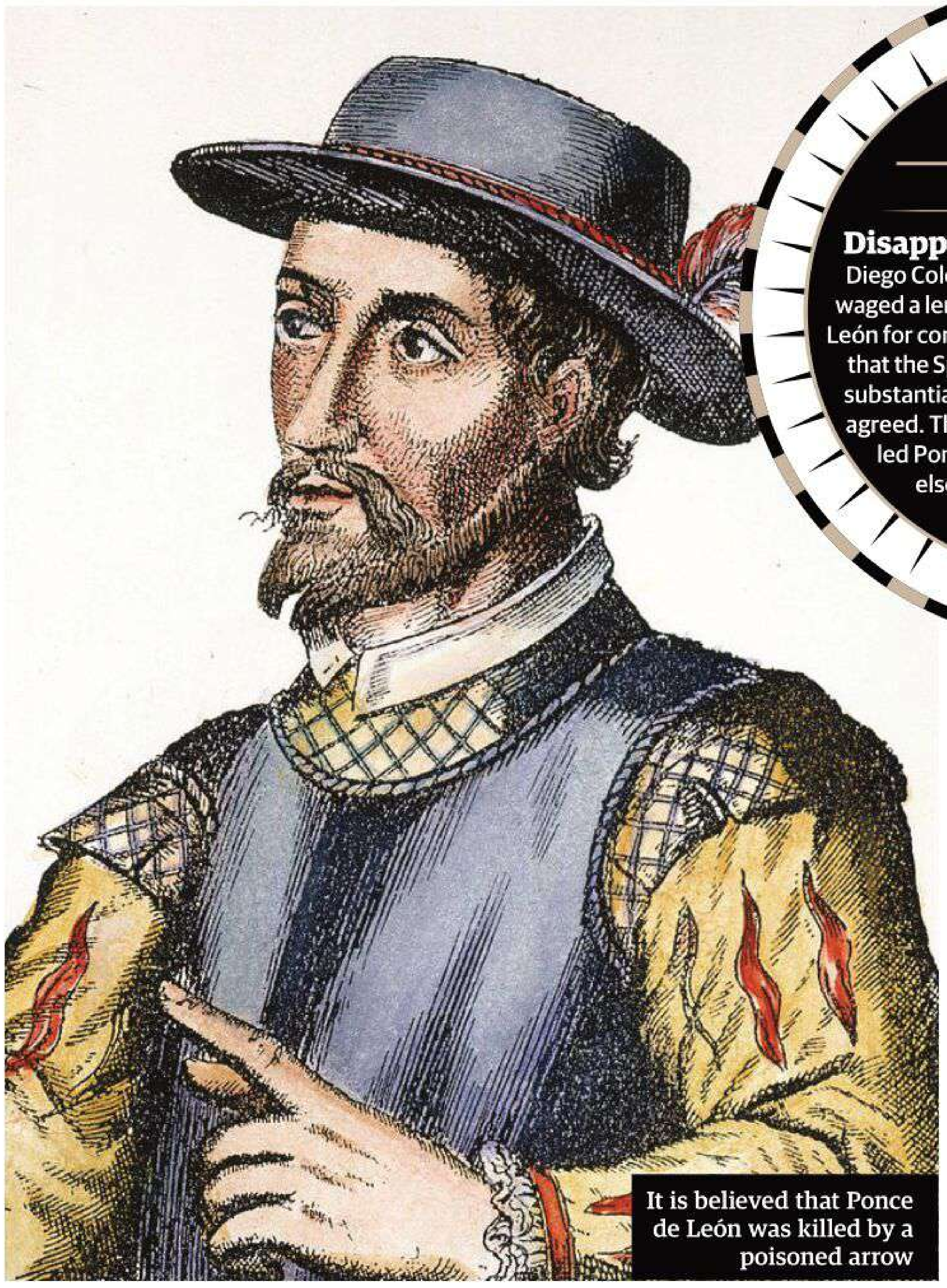
Exploring the Place of Flowers

A bit of a soldier of fortune, Ponce de Leon came to the New World and discovered the vocation that consumed his life

By the time Juan Ponce de León reached the New World, he had been to war in Granada, and when the campaign to eject the Moors from Spain successfully concluded in 1492 his martial services were no longer required. Therefore, he turned to new adventures as the Age of Exploration extended across the globe. In the autumn of 1493, he joined the second voyage of Christopher Columbus as one of 200 gentleman volunteers.

Two months later, Columbus reached the Caribbean and the island of Hispaniola, where Ponce de León again found purpose. He gained the confidence of Hispaniola's governor, utilising his military experience to quell an uprising of natives, and built settlements in the eastern half of the island. He was later named provincial governor of eastern Hispaniola and prospered, cultivating a substantial land grant with which he had been rewarded and selling livestock to contacts in Spain.

During his time on Hispaniola, Ponce de León heard stories of gold and fertile land on the nearby island of Borinquen. After making at least one clandestine voyage to the island, he obtained permission from the Spanish crown in 1508 to conduct further exploration. With 50 soldiers aboard a single ship, he made landfall near the site of present-day San Juan and named the island Puerto Rico. The discovery of gold fuelled high expectations, and Ponce de León was named governor of Puerto Rico the following year. Presiding over the exploitation of the native Taino people, the governor established successful



It is believed that Ponce de León was killed by a poisoned arrow

Defining moment

Disappointment in Puerto Rico

Diego Colon, son of Christopher Columbus, waged a lengthy legal battle against Ponce de León for control of Puerto Rico. Colon asserted that the Spanish crown had given his father substantial rights there, and Spanish courts agreed. The loss of influence in Puerto Rico led Ponce de León to seek his fortune elsewhere, turning to Florida.

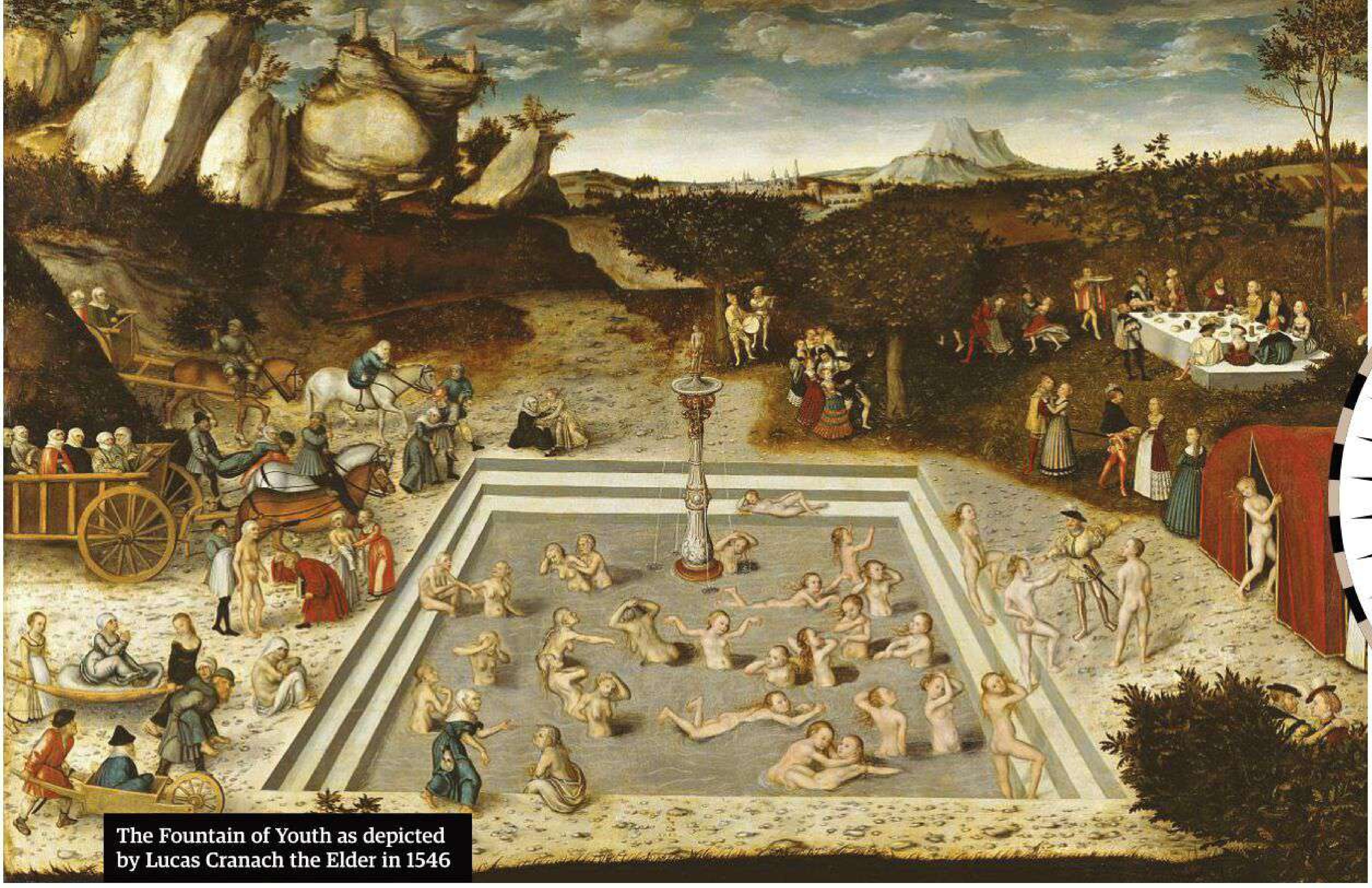
1509-1511

JUAN PONCE DE LEÓN

1460-1521

Brief Bio

Although legend says Ponce de León sought the Fountain of Youth, it was more likely the lure of gold that brought him to Florida in the first place. Beautifully named the Place of Flowers, Ponce de León was the first to explore this land for Spain. He additionally explored the island of Puerto Rico and was named its first governor.



The Fountain of Youth as depicted by Lucas Cranach the Elder in 1546

settlements across the island. However, more than two years of legal intrigue dogged Ponce de León as Diego Colon, the son of Columbus and Viceroy of Hispaniola, marginalised and eliminated the influence of Ponce de León in Puerto Rico.

Bitter that the fruits of his labour had been lost in Spanish courtrooms, Ponce de León did retain the favour of King Ferdinand of Spain, who urged the soldier-explorer to seek other lands in the New World. The favorable bargain that Ponce de León struck with Ferdinand's blessing allowed the explorer to retain exclusive rights to the development of any lands he discovered.

Once again, rumours of riches raised Ponce de León's adventurous ardour. He had heard tales of a lush island called Bimini, where gold, fertile land, and possibly even a Fountain of Youth with magical waters that restored the vigour of those who drank from it, were waiting.

Ponce de León personally organised and financed an expedition of three ships and about 200 men, which set sail from Puerto Rico in March 1513 on a generally northwestern course. A month later, the expedition came ashore on the eastern coast of North America. The beauty of this pristine territory captivated Ponce de León, and the actual season was near the observance of Easter, known in Spain as Pascua Florida, the Feast of Flowers. For these reasons, the explorer named the land La Florida, the Place of Flowers. The site of the landing was near present-day St Augustine, Florida.

> "Ponce de León is reported to have discovered the Gulf Stream"

Although Native American peoples had inhabited the area for some time and Spanish raiding parties have reached the Bahamas and probably the eastern coast of Florida previously, Ponce de León brought attention to the region like never before. Continuing to the south along the Florida coastline, the explorer is said to have encountered rough seas and named the area Cape Canaveral, or Cape of the Currents. He is reported to have discovered the Gulf Stream, a virtual highway of warm current that speeds the travel of ships, and visited the Florida Keys and the Dry Tortugas, barren islands with no water but large populations of turtles.

Some say that Ponce de León entered the Gulf of Mexico and continued to explore Florida's west coast as far as present-day Charlotte Harbor, where a group of Spaniards were threatened by members of the Native American Calusa tribe and retreated back to the shore. Running low on supplies, the expedition set sail for Puerto Rico.

Upon his return, Ponce de León found that the situation in Puerto Rico had become chaos. An uprising of indigenous tribesmen had resulted in the looting and burning of settlements, and several Spaniards had been killed. Sometime in 1514, he sailed for Spain to report on his discoveries. The crown named Ponce de León governor of Bimini and Florida and ordered him to put down the insurrection in Puerto Rico.

By mid-1515, Ponce de León was again en route to the island. Although details are scarce, he was somewhat successful in restoring peace; however, he ceased the military campaign when he learned that King Ferdinand had died and returned to Spain to protect his personal interests. For the next two years, he sought to secure his financial and political future, sailing back to Puerto Rico only when assured that his holdings were safe.

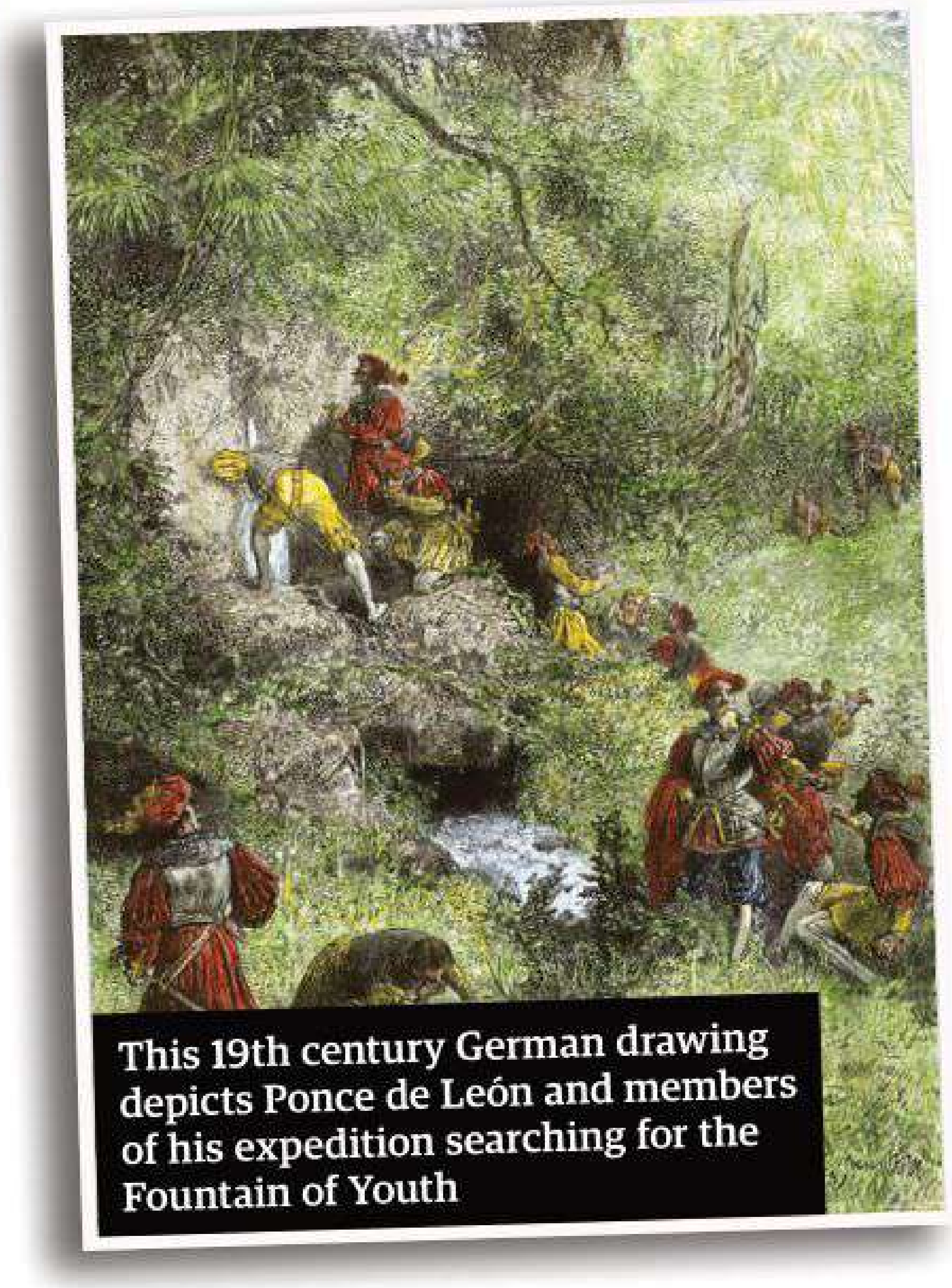
In February 1521, Ponce de León launched his second expedition to Florida. Little record of the expedition exists, but it is believed that the Calusa attacked them sometime in July. An arrow wounded Ponce de León in the thigh, and the expedition retired to Cuba, where its leader died in Havana, most likely of septicemia, later that month.

Defining moment

First Expedition to Florida

The beauty and apparent opportunity presented to Ponce de León when he made landfall in Florida for the first time energized the explorer to continue his voyage of discovery and to return to the region in 1521. Although it was filled with promise, however, the second voyage of Ponce de León to Florida ended in his own death.

1513



This 19th century German drawing depicts Ponce de León and members of his expedition searching for the Fountain of Youth

The Fountain of Youth

In the commission to explore the reaches of the Caribbean bestowed on Ponce de León in 1514 by King Ferdinand of Spain, there is no mention of the possible discovery of the Fountain of Youth. Still, the explorer is forever associated with the quest for the mythical fountain that was said to restore the youth and stamina of those who drank its waters. By the early 16th century, the legend of the Fountain of Youth was widely known, its possible origin lying in Ancient Greece while a version of the same tale was also common with the native peoples of the Western Hemisphere.

According to available contemporary works, Ponce de León never wrote of the Fountain of Youth, and it is likely that he regarded the story of its existence as a fable. The first association of the explorer with the fountain is likely found in *Historia general y natural de las Indias* (General and Natural History of the Indies), written by Gonzalo Fernández de Oviedo y Valdés in 1535, a full 14 years after the death of Ponce de León. Through five centuries, the romantic legend of the ill-fated explorer and the fountain has persisted – and it is likely to continue still.

Hernán Cortés

Emissary of Quetzalcoatl

Forever immortalised as the man who conquered the Aztecs, just how determined was Cortés to obliterate the New World?

The glorious, golden city of Tenochtitlán lay in ruins, its population starved and its warriors beaten into the dust. The great Aztec civilisation was no more. The author of their pain was one Hernán Cortés who had led his conquistadors with a steely and ruthless assurance and was handsomely rewarded with the governorship of New Spain and an embarrassment of riches. But where did it all begin?

Once the New World was opened up to explore, everyone in the Old World wanted a piece of the action. One of the many men seeking fame and fortune was Hernán Cortés. Born in 1485 in Medellín, Spain, he was part of a family embedded in the lower rungs of nobility and was the second cousin once removed of Francisco Pizarro, who later led the expedition that conquered the Inca Empire by capturing and killing the Incan emperor, Atahualpa, and claiming the land for Spain. Always craving for adventure, even in his wildest dreams Cortés couldn't have predicted that he would be the man to bring an entire civilisation to its knees. Going against his parents' wishes, the Spaniard ditched his studies of Law and Latin at the University of Salamanca to travel west in 1504.

Arriving in the town of Azúa in the modern day Dominican Republic, he worked as a notary for a number of years. Cortés' first chance of adventure came a few years later when he was due to take part in an exploration trip to Central America in 1509, but he missed it due to an abscess in his leg possibly caused by a bout of syphilis. Eventually, in 1511, he upped sticks and joined an expedition to Cuba under the leadership of Diego Velázquez de Cuéllar, earning the respect and trust of the new governor in the process. It was only seven years later that he found the courage, the funds and the opportunity to undertake his own solo voyage. The time was right as Cortés had been given a confidence boost by becoming close to Velázquez since their expedition to Cuba and had even married his sister-in-law. He

Defining moment

Cortés the Aztec god

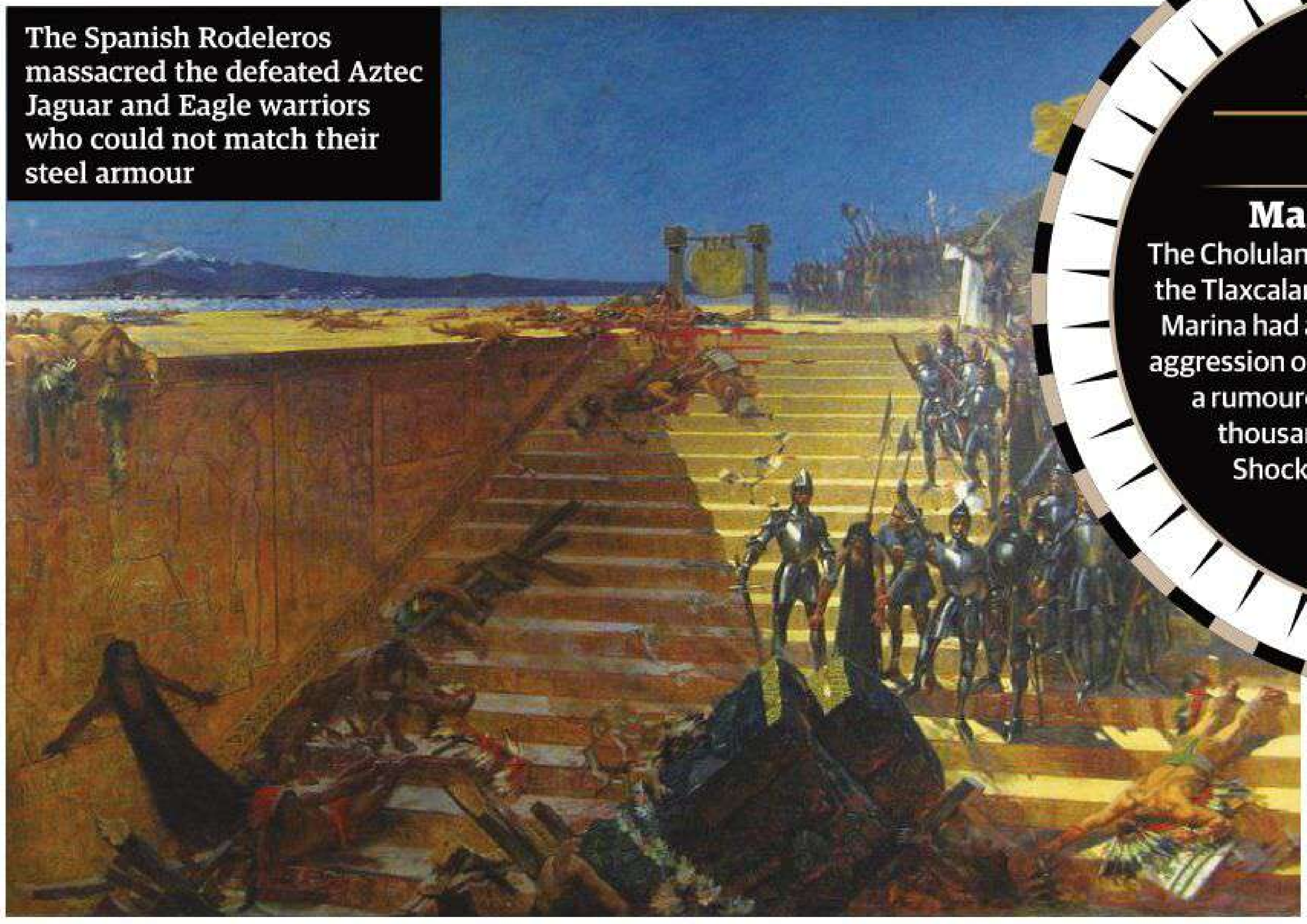
Quetzalcoatl was one of the most important Aztec gods. Legend told that the god was a mix of a serpent and a bird but could also take human form and that he would return one day. By a huge slice of luck, the rumoured return coincided with the conquistadors' landing and it is claimed the Aztecs mistook Cortés for a godlike figure.

February 1519

NANDVS CORTESIVS

Hernán Cortés

> "It was only seven years later that he found the courage, the funds and the opportunity to undertake his own solo voyage"



The Spanish Rodeleros massacred the defeated Aztec Jaguar and Eagle warriors who could not match their steel armour

Defining moment

Massacre at Cholula

The Cholulans weren't as easily persuaded as the Tlaxcalans to ally with the Spanish. Dona Marina had already warned her lover of the aggression of the Cholulans and pre-empting a rumoured ambush, Cortés executed thousands as a warning to others. Shockwaves were sent through Mesoamerica.

October 1519

EL GOBERNADOR
EL INTERVENTOR
EL CAJERO
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MIL PESETAS
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BANCO DE ESPAÑA
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> "Cortés was a dedicated explorer and travelled as far south as Honduras in 1524 in search of mythical cities of gold"

rose rapidly through the ranks of local government, giving him his first taste of leadership and power. His influence grew so great that Velázquez became concerned that his subordinate was becoming too powerful, and ordered Cortés to cancel his upcoming expedition to mainland Central America. True to his personality, the headstrong Cortés completely ignored the orders of his superior. He swiftly set out to Mexico with 500 men and 11 ships. By the end of March 1519, he had reached the coast and landed on the Yucatan Peninsula.

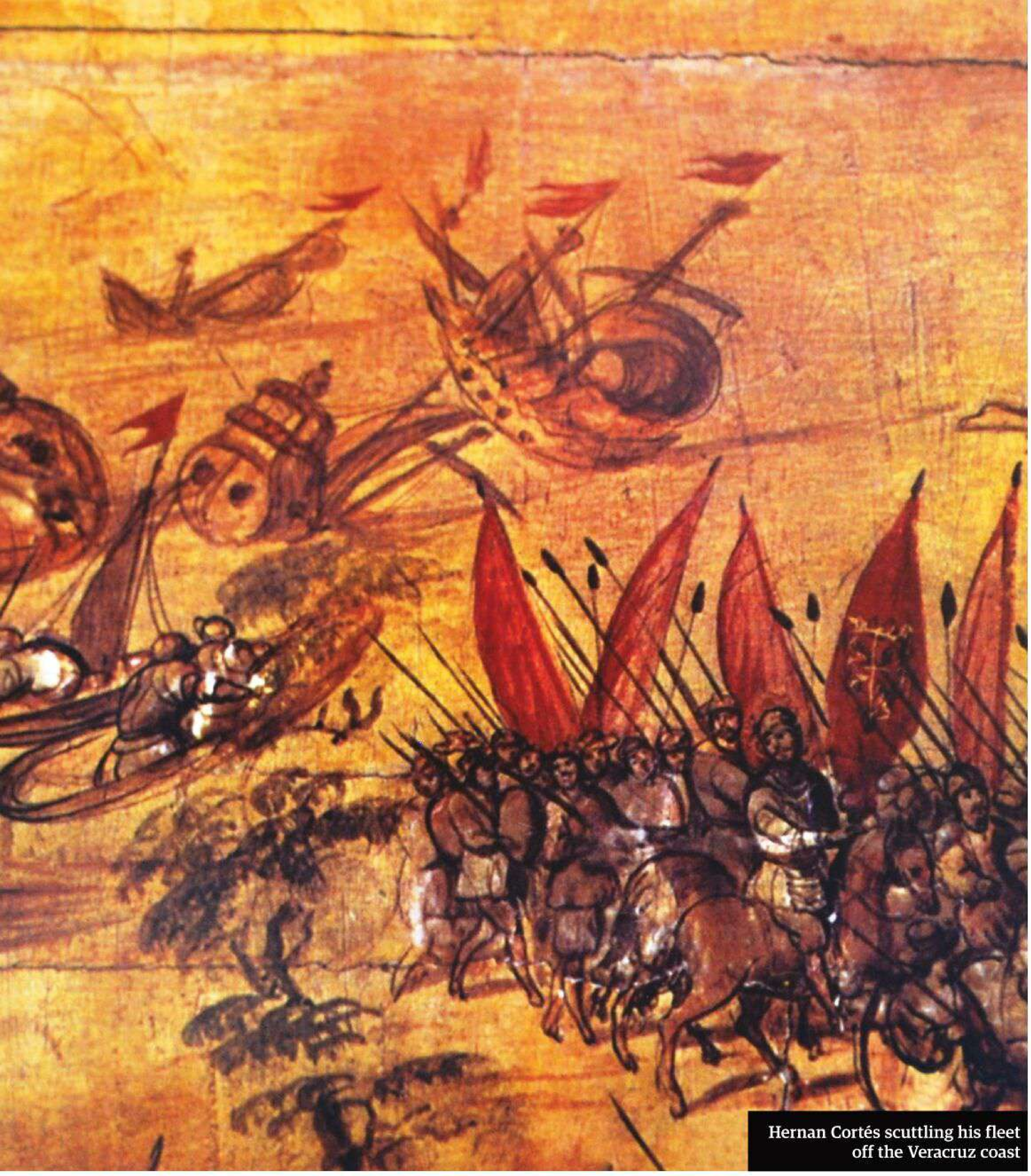
One of the landing party's first contact was with a woman named Dona Marina. A local, she would play a pivotal role in the future success of the expedition, acting as the interpreter between the Spaniards and the local population. She would also become Cortés' mistress and give birth to their son Martin, known as one of the first American and Spanish mixed race children ever born.

Unknowing of their surroundings and with only 17 cannon, 12 horses and a small number of war dogs, Cortés was driven by one thing: lust for gold. So confident in the expedition's success, he ordered his ships stripped and scuttled. There was now no going back. The language barrier broken, the invaders could now study the complex network of local alliances and plot to exploit them for gain. It would be a gruelling three-month journey through tropicak unknown territory but the Spanish expedition could not have been better timed. Aztec prophecy told of the return of the god Quetzalcoatl by sea and, conveniently for Cortés, he had arrived exactly at the time mythology had predicted. This astonishing coincidence might have helped turn the tide in Cortés' favour.

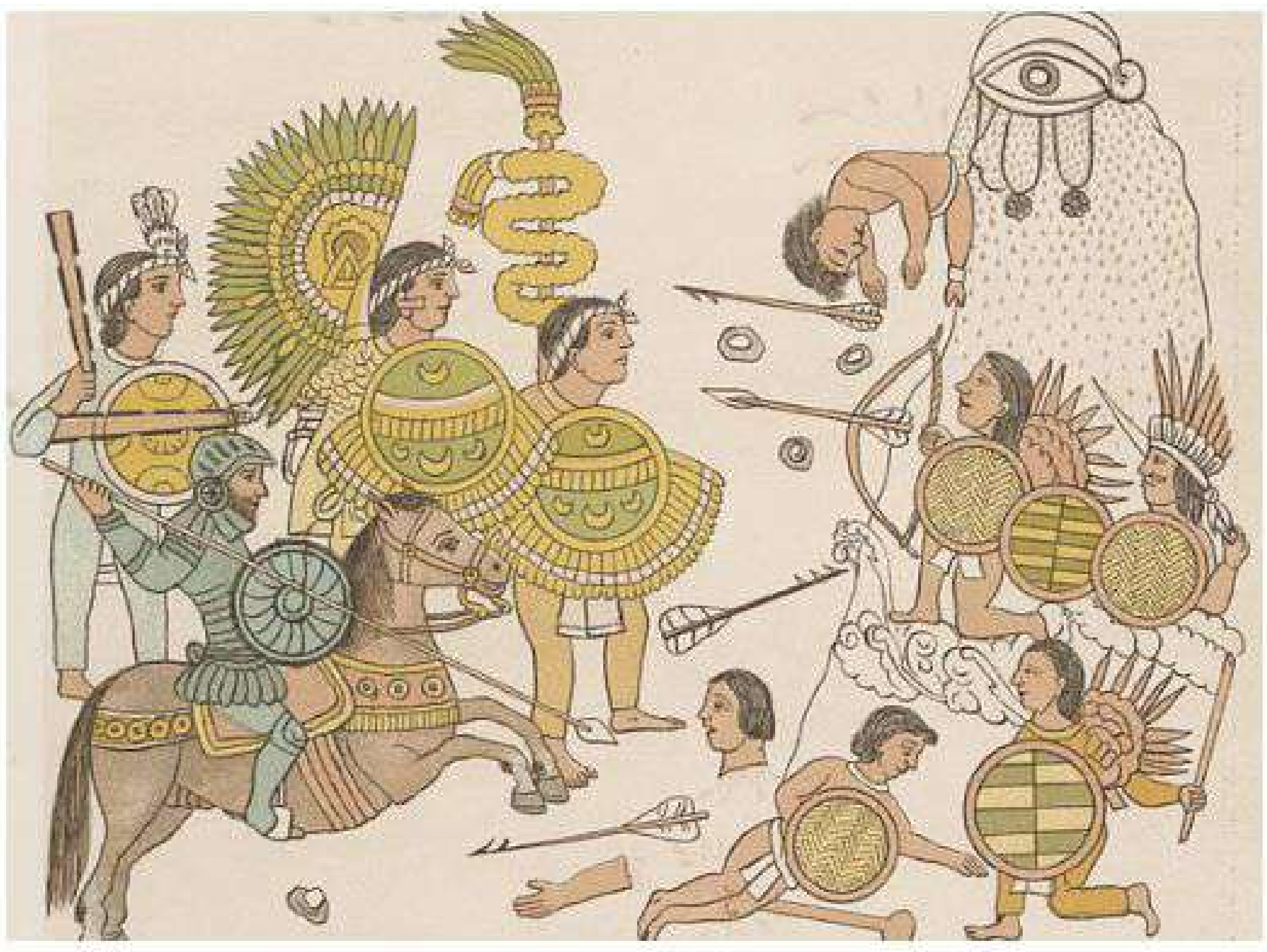
The Aztecs were the dominant civilisation in the region but there were other, smaller factions who resented the power of their overlords. When the Spaniards arrived, the Aztec Empire was in a state of political crisis and Cortés skilfully played this to his advantage. Keeping conflict to a minimum, he allied himself with the nations of Tlaxcala and Cholula, inciting riots against the Aztec representatives in the towns he passed through. His reward was an invaluable force of native allies.

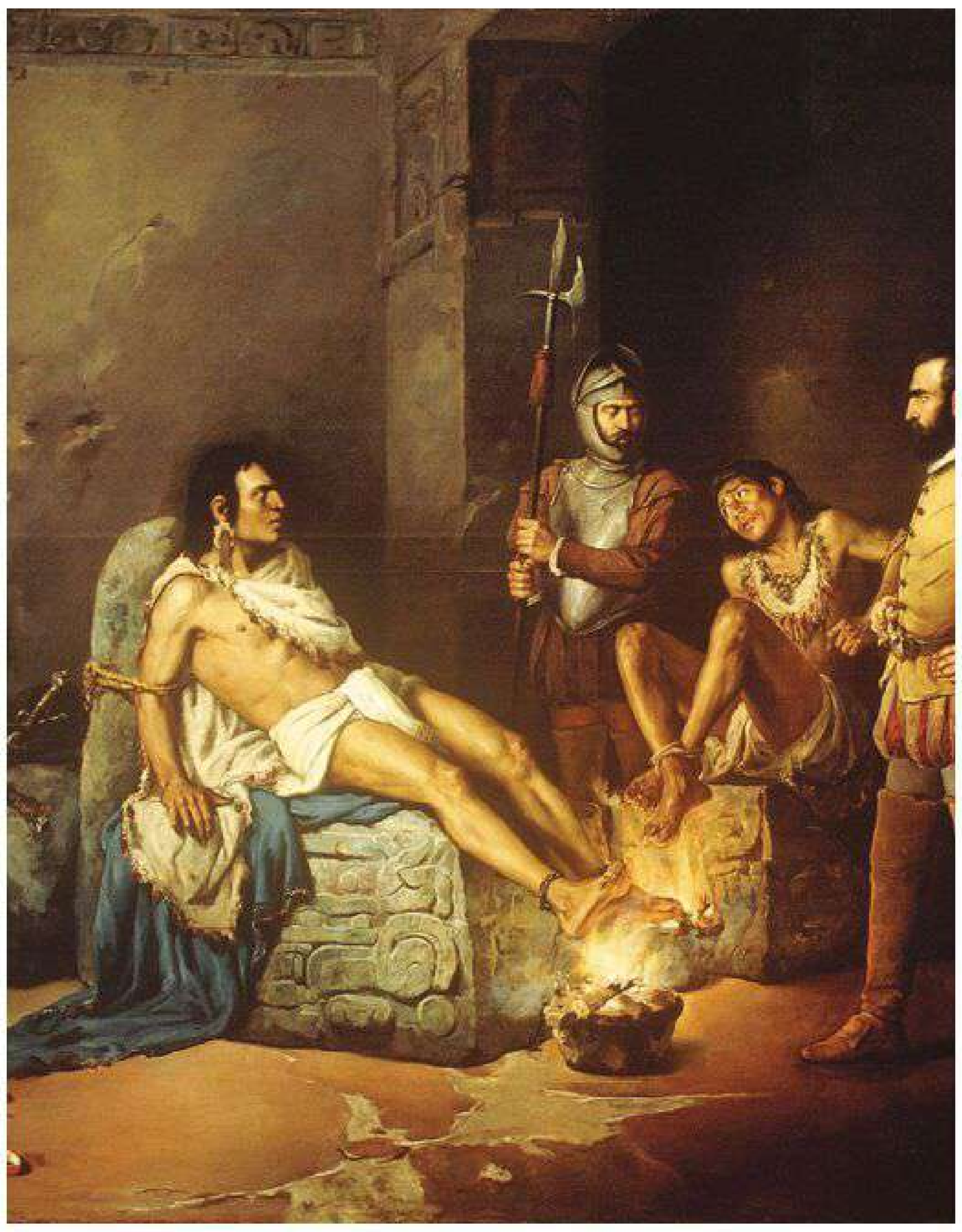
Moving through the area, the invasion force went for the jugular. They reached the Aztec capital, Tenochtitlán, on 8 November 1519, finally meeting Montezuma II and seeing the legendary city in all of its renowned glory. Montezuma welcomed Cortés with open arms and gifts of gold but the tables turned against him as the Spaniards seized the emperor and held him hostage within the confines his own capital city. Montezuma was now a puppet leader in his own city but was briefly reprieved when word came that old foe, Velasquez, was on his way to arrest Cortés for this illegal venture. This threat was dealt with and more reinforcements joined the cause but on his return, the Spanish leader found that the Aztec capital had descended into chaos.

The residents of Tenochtitlán had been enraged by the Spaniards' brutal behaviour in Cortés's absence. The remainder of the Spanish forces were besieged in Montezuma's palace after sending the emperor out in an attempt to quell the aggression, where some sources claim that the incensed Aztec crowd stoned their old ruler to death. The conquistadors, once in a



Hernan Cortés scuttling his fleet off the Veracruz coast





powerful position, were forced to retreat but would soon be back.

Despite the setback, Cortés' appetite for gold had been sufficiently whetted and he was determined to finish what he'd started. Their forces were far fewer but armed with steel, horses and cannon, the European weaponry was vastly superior. The Spanish cavalry in particular was devastatingly effective and played a key part in the decisive victory at the Battle of Otumba during the Spanish retreat. The Aztecs' numerical advantage had also been shattered by an outbreak of smallpox, one of the many Old World diseases that would ravage the Americas for years to come.

Cortés returned to Tenochtitlán in 1551, planning to conquer and pillage the city street by street. The Aztecs were now better prepared for the cold steel and clattering hooves of the Spanish. They had dug trenches to bring the cavalry down and divided their ranks in a bid to dodge cannon fire. Cortés wanted to take the city as quickly as possible but the dogged Aztec defence meant the siege would last for months.

The encirclement of the city resulted in a food shortage for the Aztec defences so the Spaniards resorted to razing the city sector by sector. The cruelty took its toll and Tenochtitlán eventually fell on 13 August. The once great Aztec Empire had crumbled at its epicentre. Mexico City and New Spain were born with Cortés as governor and Captain General. His power growing ever stronger, the indigenous population of Mexico were given no quarter and slain without mercy. Cortés was a dedicated explorer and travelled as far south as Honduras in 1524 in search of the mythical seven cities of gold between 1532 and 1536. The Honduran expedition in particular was one too many for him and it ended up damaging his health and his position of power.

Defining moment

La Noche Triste (The Night of Sorrows)

Cortés returned to a Tenochtitlán in chaos. With his men prisoners inside the city, he devised a plan to use the cover of night to sneak out over Tachuba Causeway. The men crept out of the city's deserted streets but a sentry spotted them. The alarm was raised and two thirds of the men were killed.

30 June 1520

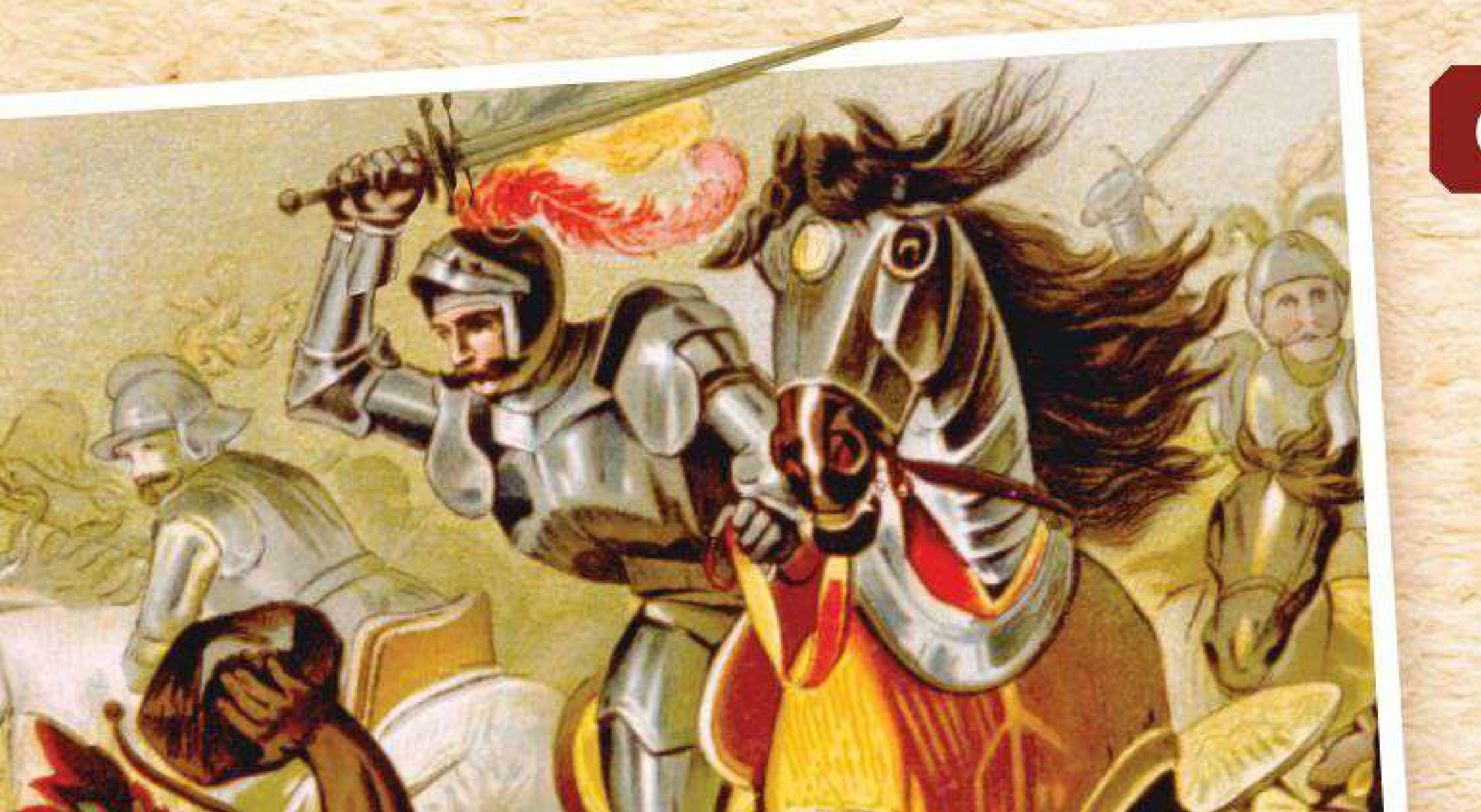
In 1528, Cortés sailed back to Spain to warm relations with King Charles V, who had disapproved of his steadily increasing wealth and power. Bringing with him magnificent riches and splendour, Charles recognised Cortés as a Captain General but not as a governor. The trip was necessary to sew up the fading links with his homeland but he returned to New Spain two years later to find it in a state of utter chaos.

Like many leaders before him, Cortés was the victim of greedy argumentative generals, tearing up his territory for personal gain. Now in his mid-forties, the destroyer of the Aztecs was becoming weary of death and conflict. After restoring some sort of order, he retired to his estate at Cuernavaca and plotted further exploration of the Pacific. Spanish officials were now monitoring his movements but he continued to explore Central America, even going as far and discovering the peninsula of Baja California in the process. One of his final journeys was to Algeria where after becoming shipwrecked in a storm he almost drowned. This may have hastened his decision to travel home to Spain. Shortly after returning, he died aged 62 in Seville on 2 December 1547, a weakened and aged man but his legacy as a bringer of death and destruction to the Aztecs and their homeland fully intact.

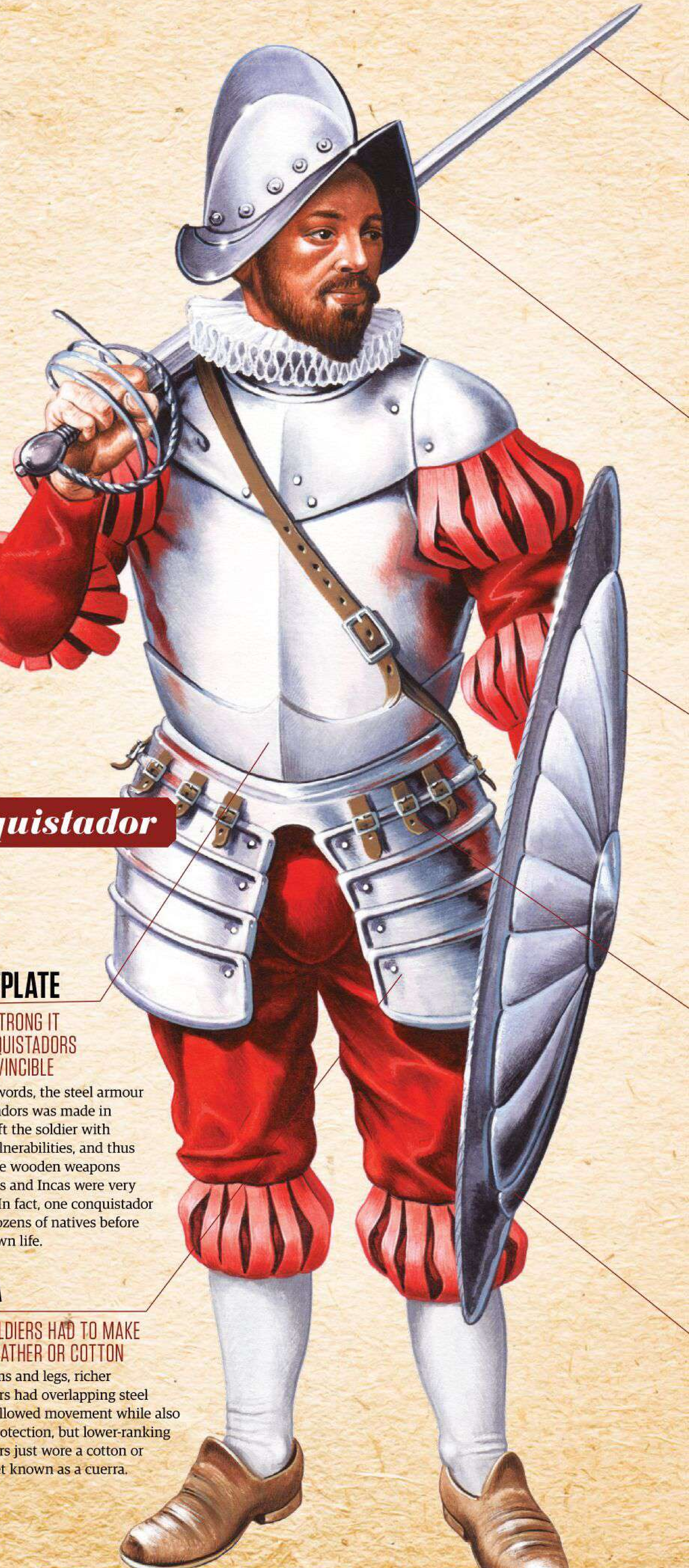
© Alamy; Corbis

Warriors of the Age of Discovery

During the Age of Discovery, conquistadors sailed beyond Europe to the Americas in search of wealth and fame. They were often met with resistance from indigenous empires



Although fearsome warriors, Aztec armour and weapons could not compete with Spanish steel



BREASTPLATE

STEEL SO STRONG IT MADE CONQUISTADORS ALMOST INVINCIBLE

Like their swords, the steel armour of conquistadors was made in Toledo. It left the soldier with very few vulnerabilities, and thus the primitive wooden weapons of the Aztecs and Incas were very ineffective. In fact, one conquistador could kill dozens of natives before losing his own life.

CUERRA

POORER SOLDIERS HAD TO MAKE DO WITH LEATHER OR COTTON

For their arms and legs, richer conquistadors had overlapping steel plates that allowed movement while also providing protection, but lower-ranking conquistadors just wore a cotton or leather jacket known as a cuerra.

HELMET

PROTECTING THE CONQUISTADORS' HEADS IN STYLE

The iconic steel helmet of a conquistador had a notable crest on the top and curved sides. Most conquistadors favoured a simple helmet that covered only the top of the head, but others encased the majority of the head, leaving just a small gap for the wearer's eyes, nose and mouth.

TOLEDO SWORD

SWORDS DIDN'T GET MUCH BETTER IN THE 1500S

Wealthier conquistadors made use of the finest swords of the 16th century. Made in the Spanish city of Toledo, the steel sword of the same name gave these soldiers a huge advantage over the natives of the New World thanks to its strength and resilience. Some cavalry would also carry lances.

CAMISA

AS FIGHTING PETERED OUT, CONQUISTADORS GOT MORE CASUAL

Most conquistadors wore a basic long-sleeved shirt under their armour known as a camisa. Over time, when some conquistadors started to be revered as gods and hostilities lessened, they opted to wear the lighter camisa on most occasions as metal armour was no longer essential.

JACQUETA DE MALA

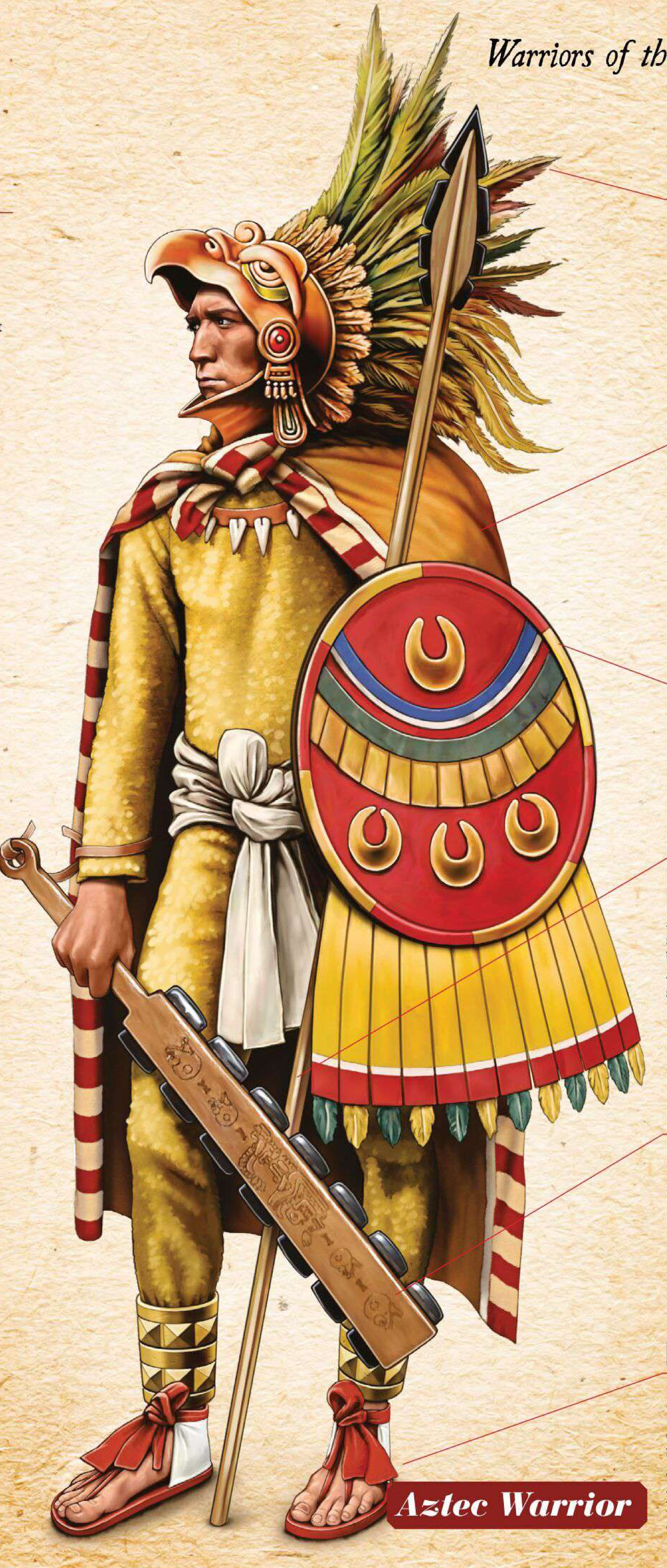
WEALTH DETERMINED HOW ELABORATE YOUR ARMOUR WAS

Conquistadors were not a uniform army. Rather, they were adventurers who sought a fortune in the New World of America. Thus, many had contrasting armour; while the wealthiest could afford steel plating, the rest relied on any metal available – often a sleeveless chainmail vest called a jacqueta de mala.

SHIELD

IF YOUR ENEMIES FIGHT WITH CLUBS, WOOD IS AS GOOD AS STEEL

Conquistador shields were mostly circular with a convex design in order to deflect blows. The strongest shields were made of metal, although – due to the nature of Aztec weapons – wooden shields were just as effective.



Aztec Warrior

HEADGEAR

ONLY AN EAGLE WARRIOR COULD WEAR THIS HELMET

An eagle-head helmet was a sign that a warrior had entered the elite fighting force of the Eagles, while members of the Jaguar warrior force wore the head of a slain jaguar.

CLOTHING

PADDED COTTON ARMOUR CALLED ICHCAHUIPILLI WAS TOUGH

The bravest warriors who captured four prisoners could wear eagle helmets and feathers or jaguar skins, but the base layer was typically made of thick cotton.

SHIELD

PROTECTION FROM PROJECTILES

Protection from missiles came in the form of the chimalli, a round shield made of wood, with fibres twisted into it for strength.

LONG-RANGE WEAPON

WARRIORS WERE PROFICIENT USERS OF ARROWS AND SLINGS

Aztec warriors also used arrows, slings and spears. The latter could be thrown many metres with the atlatl – basically a stick with a mini sling at one end.

MAQUAHUITL

THE PRIMARY WEAPON EMPLOYED BY AN AZTEC WARRIOR

The maquahuitl was a brutal wooden sword edged with obsidian shards. This was said to be able to decapitate men and even horses. They also used the tepoztopilli, a 2m (6.6ft) pole, which was lined with sharp stones too.

FOOTWEAR

ONLY ELITE WARRIORS COULD WEAR CACTLI

Ordinary citizens and warriors were barefoot. However, upper-class citizens and the elite fighting forces were allowed to wear cactli. These sandal-like shoes had straps wound around the ankles to hold them in place.

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Ferdinand Magellan

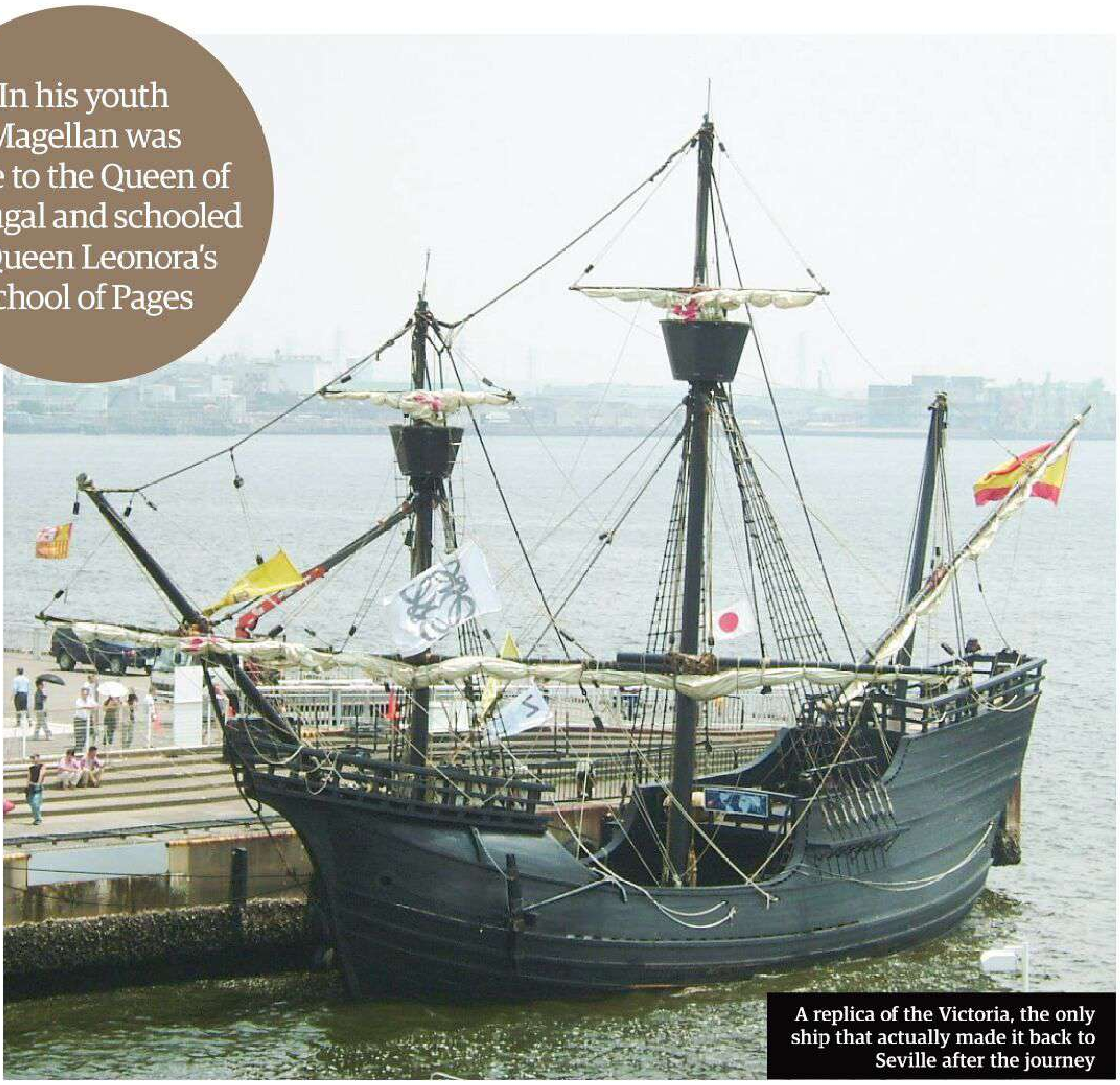
Beyond the Unknown

Magellan's expedition to locate a route to the Spice Islands from the west led to the first circumnavigation in history. Magellan, however, never made it home

Italian Antonio Pigafetta (1491-1531), chronicler of Ferdinand Magellan's voyage around the world (to find a way west to reach the east), told a story which, if not based on first-hand experience, would read to 16th century Europeans as a sci-fi novel would read to people in the 21st century: a tale out of this world. In an age when mariners and philosophers still believed that the sea would boil them alive when they crossed the Equator – that giant monsters from the briny depths would pop up and eat them or they'd literally fall off the planet if they sailed over the edge of the world – Pigafetta's journal of events proved as ground-breaking to literature as his dead captain's mission to geography. Pigafetta's account is full of conflicts, high drama, moonlit orgies, strange sexual rites, islands filled with cannibals and feats of endurance which crossed the threshold of endurance and sanity. Magellan's voyage led to the first circumnavigation of the world, but only a few men lived to tell of the things they had seen. Pigafetta was one of them.

After Christopher Columbus discovered the Americas, the heated rivalry between frenemies Portugal and Spain reached fever pitch. Splitting the known world between them, they sought the help of Pope Alexander VI to ratify the agreement what became the Treaty of Tordesillas. Signed in 1494, what happened next has been described as the Renaissance era's version of the 20th century space race. When the South Sea was discovered at

In his youth Magellan was page to the Queen of Portugal and schooled at Queen Leonora's School of Pages



A replica of the Victoria, the only ship that actually made it back to Seville after the journey

Ferdinand Magellan

The course that Magellan first charted was followed by other navigators

FERDINAND MAGELLAN

1480-1521

Brief Bio

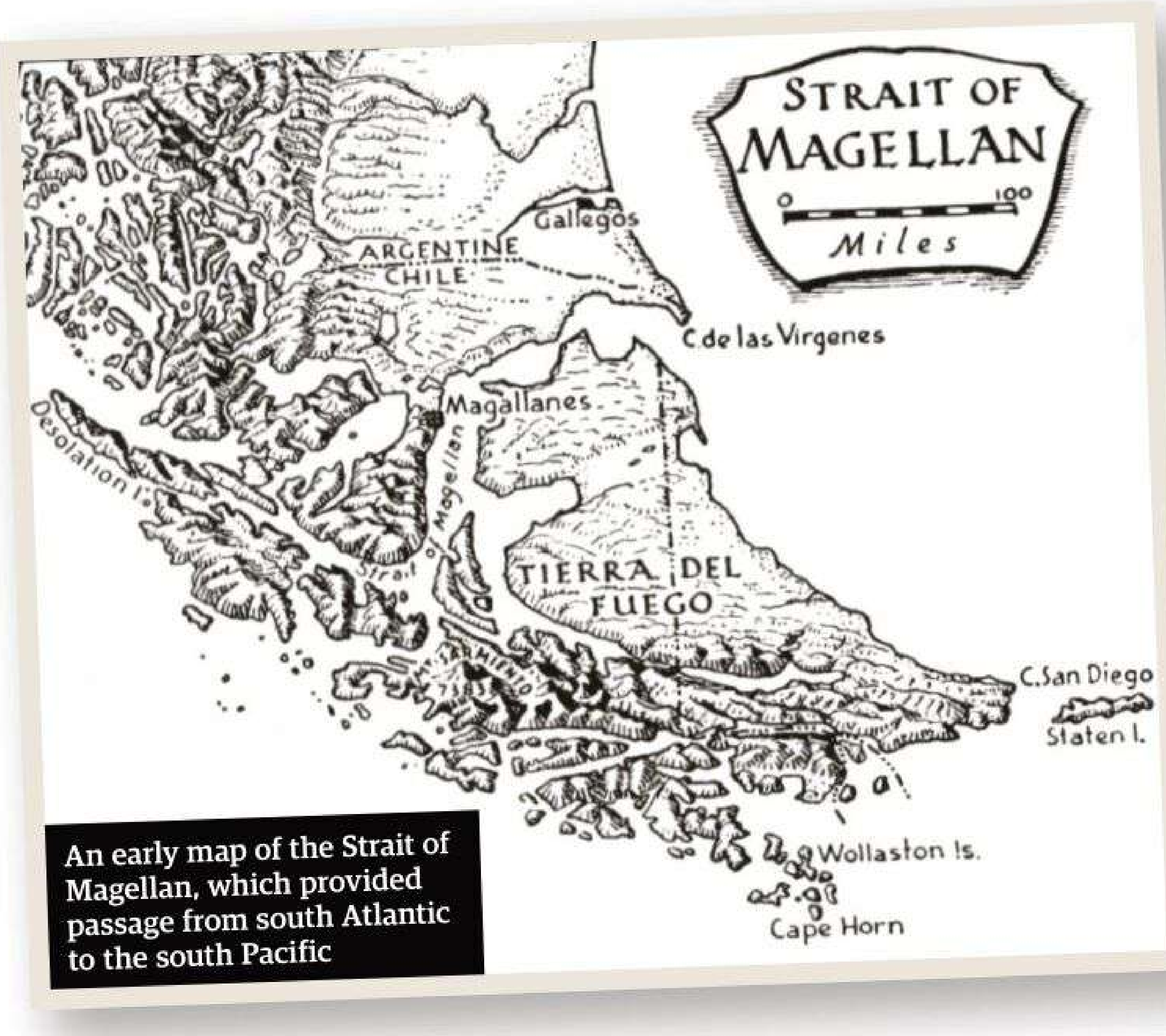
Portuguese nobleman, Ferdinand Magellan, was in the service of his home nation's rival – Spain – when he undertook his globe-trotting exploration to find a route to the Spice Islands from the west. An experienced seafarer, on previous voyages he had experience of journeying to India and had reached as far as the Malay peninsula.

Panama in 1513, there was much discussion about a possible route to it by journeying south along the land mass of what would become the South American continent and navigating a route from the Ocean Sea (the name for the Atlantic) into the South Sea (the Pacific). Portuguese nobleman, Fernão de Magalhães, defected to Spain after years of loyalty to his homeland and set about launching a bid to write his name in the history books as the discoverer of this passage.

In Spain, Fernão de Magalhães became 'Hernando de Magallanes' (Ferdinand Magellan) and sought King Charles I, who would later become Holy Roman Emperor Charles V, to finance the trip. Yet as a Portuguese, Magellan was viewed with suspicion, especially when it came to his insistence on commanding the flotilla and seeking to be the highest authority aboard – no ifs, buts or maybes. This rankled with the Castilians to potentially mutinous effect. Politics and nationalism did not hold Magellan back, but his nationality and behind-the-scenes politics challenged his authority on more than one occasion.

King Charles wished to commence with Magellan's scheme, known as the Armada de Molucca after its destination, but he was in debt. The Casa de Contratación, the agency which oversaw all voyages and trade in Spain, turned to banking guru Cristóvão de Haro to finance the expedition. Capital was raised to the tune of 8,715,125 maravedís. Most of this was provided by de Haro, with the king's share masking de Haro's own contributions (at high interest rates), so as to not provoke the ire of Portugal.

During his time in India, Magellan participated in several battles. He was wounded at the Battle of Diu in 1509



An early map of the Strait of Magellan, which provided passage from south Atlantic to the south Pacific

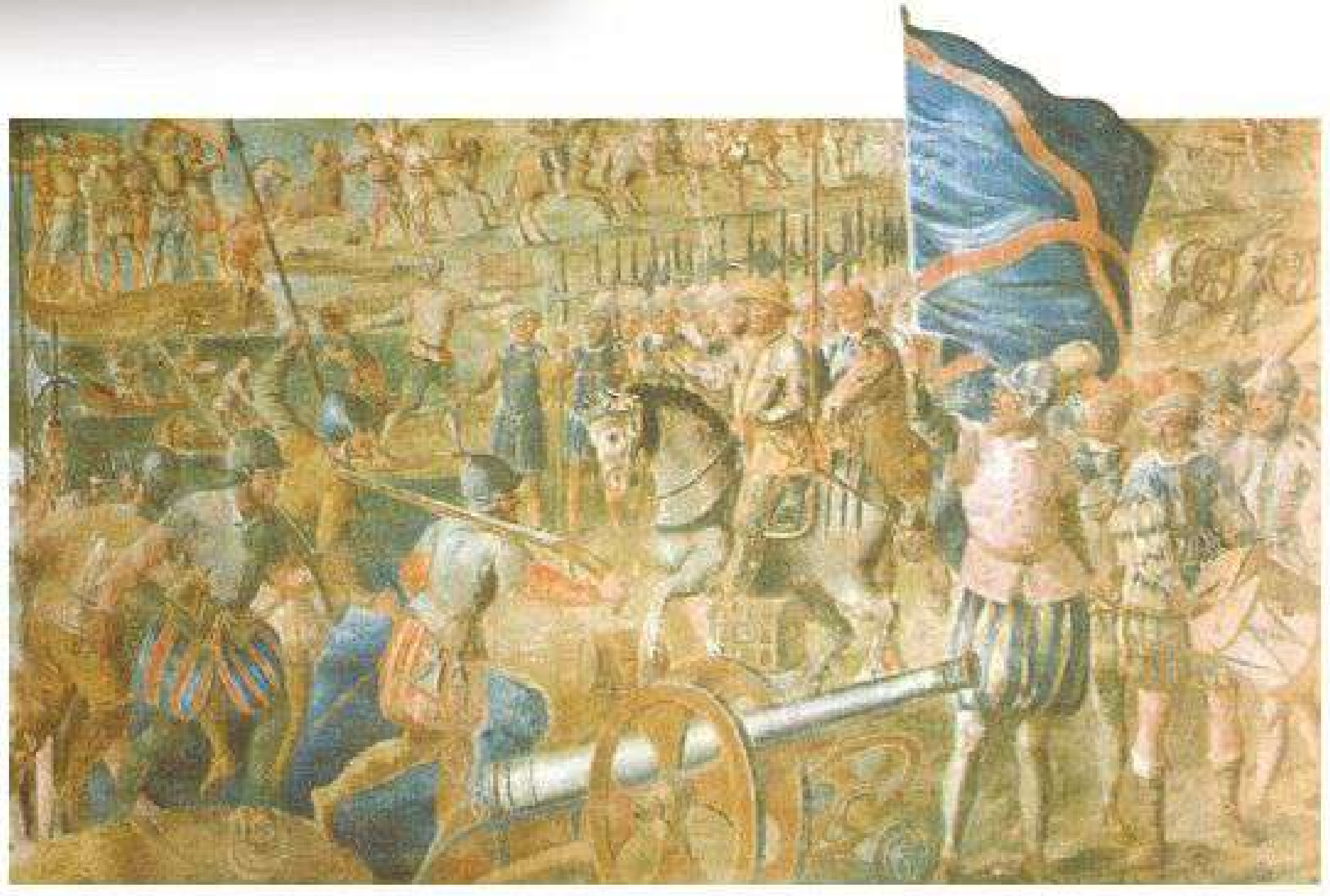
Juan De Cartagena proved a thorn in the side of Magellan from the off. As inspector-general, the Castilian believed he was under the king's direct authority to act as company leader. While he was very much the crown's eyes and ears, and he mistrusted the Portuguese Magellan, he was mistaken in his remit. "You will advise us fully and specifically of the manner in which our instructions and mandates are compiled with in said lands… how said captains and officers observe our instructions, and others matters in our service" read the instructions that were given to de Cartagena.

Almost as soon as the flotilla set sail, Cartagena plotted against Magellan with a few others. For instance, when Magellan learned Portuguese vessels were on his tail, he took a route down west of Africa instead of out across the Atlantic to Brazil (which Pigafetta called 'Verzin'). Cartagena deemed such manoeuvring deeply suspect and accused him of subterfuge. When the ships met with heavy weather and storms, Cartagena believed Magellan was incompetent and was needlessly risking their lives. When he made his first move against the captain general, it ended with failure and Cartagena clapped in irons for a while. All this fed Magellan's bullishness, but also rubbed salt into the wound that was lack of respect. But when the time came to fight, during a full-on mutiny, he acted with fearsome brutality and conviction.

In Brazil, the flotilla met friendly natives and the men – though officially forbid from sexual relations with tribeswomen – spent their hours in thrall to carnal pleasures. They were in paradise. One curious incident aboard the ship, however, demoralised the crew and increased a sense of resentment against Magellan. Homosexuality was punishable by death under Spanish law and when a situation arose – a cabin boy found with a mariner – Magellan ordered the older man executed (by strangulation).

As they made their way along the South American coast to the River Plate, they wondered if it was the opening to the strait. But it wasn't. The search continued laboriously on and involved numerous scouting missions. At times, the weather was so foul things looked less bleak and more completely hopeless. Squalls and storms in the region were some of the fiercest in the world, as the cold air rushed down from the Andes to meet the open ocean. It was a storm, however, which led to their good fortune. Seeking shelter from

"When Magellan learned Portuguese vessels were on his tail, he took a route down west of Africa"



Defining moment

Battle of Azamor 1513

The siege of Azamor, an old city of Morocco, was a key moment in Magellan's life. Having returned from India and full of ambition to launch an expedition, he was thwarted by King Manuel, who took a personal dislike to Magellan based on his loyalty to the previous king (his old rival). Magellan fought bravely in the siege, coped a lance to the knee, giving him a permanent limp and financially ruining him. For his bravery in battle, he was awarded the rank of quartermaster. Yet his relationship with King Manuel deteriorated to the point of no return.

Timeline

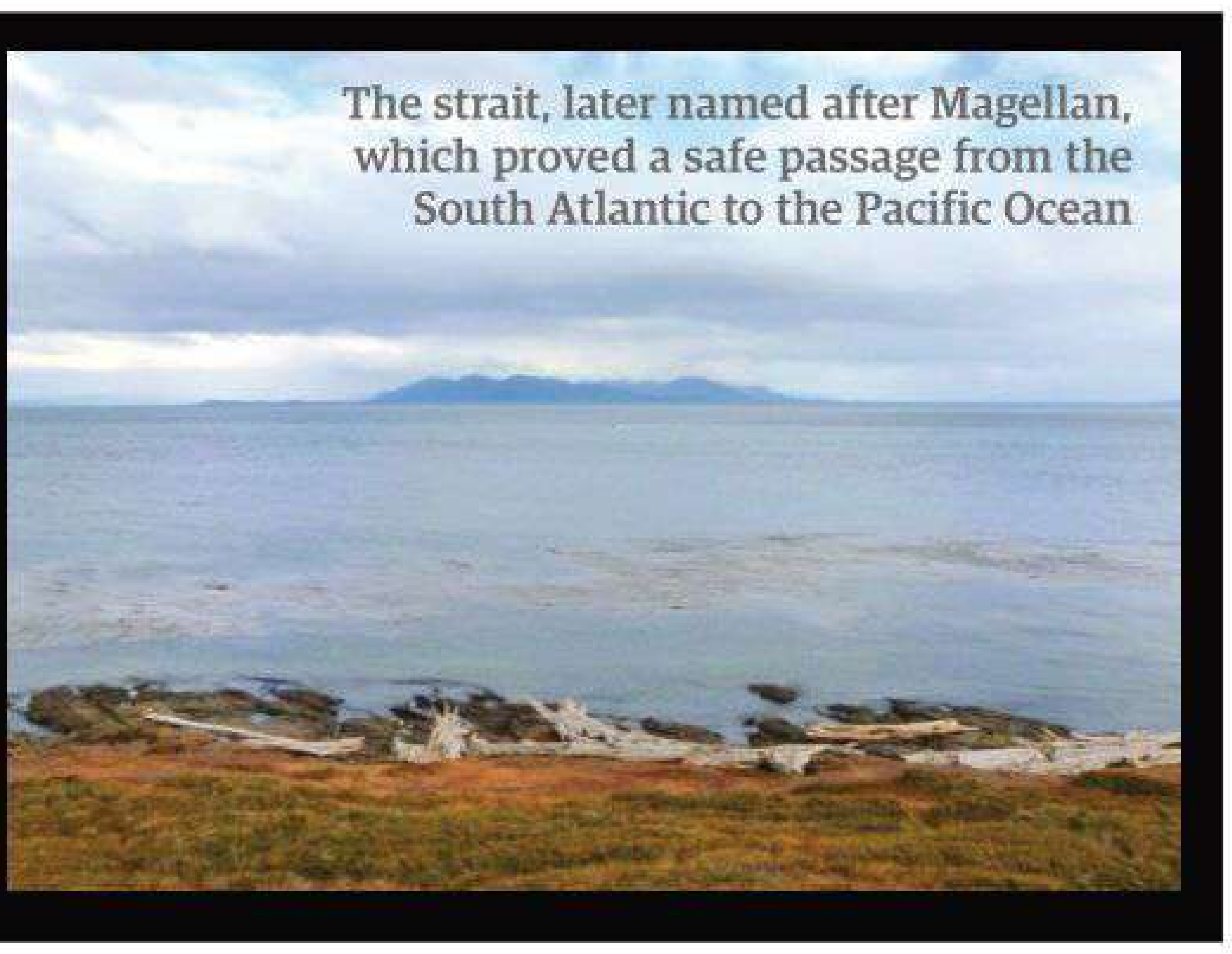
1480

- **Born in Sabrosa**
  Magellan hailed from nobility and was born in northwest Portugal as Fernão de Magalhães. He was put into service in the royal court as page to King João II. **1480**
- **Death of King João II**
  The death of the king put Magellan in a tight spot. King Manuel didn't like him and frustrated Magellan's efforts to advance his career for a life at sea. **1495**
- **Heading to India**
  Finally, in 1505, Magellan and his brother Diogo are sent to India under command of Francisco de Almeida. They helped establish trading outposts in the sub-continent. **1505**
- **Balboa discovers the Pacific**
  Conquistador, Vasco Núñez de Balboa (1475-1519), crossed the Isthmus of Panama and from the top of a mountain saw the South Sea (Pacific Ocean) for the first time. **25 September 1513**
- **Approaching the king**
  Realising his chances of leading an expedition have been reduced to nought in Portugal, Magellan and his cohorts approached King Charles of Spain with their plan to reach the Spice Islands from the west. **October 1517**

Discovering the passage

The ships' cannons were fired in celebration. Magellan's dream had finally come true: he had found and successfully navigated a route from one mighty ocean (the Atlantic) to what was known then as the South Sea. The world would never be the same again. Magellan, who was unsure if this was indeed the South Sea or another undiscovered ocean, christened it Mar Pacifico (Pacific Ocean) because the water was found to be tranquil.

Finding the strait had proven problematic and fraught with danger. Magellan had pushed his crew to their very limits of endurance and patience. They'd braved unfriendly tribes, freezing rain, squalls of frightening ferocity, short rations of food, the loss of a ship and a maze of entry points. There was also general confusion and the possibility they'd strayed into Portuguese territory and violated the Treaty of Tordesillas. Navigating through a channel and series of bays, with vertiginous mountains on both sides that was exceedingly narrow at points, took them five long weeks. The threat of running aground was constant. Magellan and his entire company praised God and the Virgin Mary, when they saw before them a wide-open deep blue sea. Mission accomplished.


The strait, later named after Magellan, which proved a safe passage from the South Atlantic to the Pacific Ocean

a sudden blow-up, they entered a bay and came across what they believed at last could be the elusive strait.

When the ships finally saw the Pacific, they rejoiced. Magellan could write himself into history. On 6 March 1521, they reached what is believed to be Guam. As is typical of European explorers, Magellan's attitude to natives came in several flavours of violence and terror. When islanders attempted to steal one of Magellan's small pilot boats, he ordered his men to a nearby village and proceeded to burn down their homes. He killed seven villagers, too. When he wasn't busy harassing the locals, he stuck his nose into local politics. This was to prove his downfall.

Magellan had survived roaring oceans, repeated attempts at mutiny and a depleted crew through starvation, disease and low morale. But he had made good on his promise to find a route to the Spice Islands by sailing west. Nobody could take that away from him. Sailing to Cebu, Magellan persuaded the chief and his tribe to convert to Christianity. Moving on to the island of Mactan, to confront a chief who refused the Christian God, Magellan set ashore in skiffs with 49 men in armour. He did not wait for backup from the Cebuans.

Greeted by 1,500 warriors without an ounce of fear, Magellan bragged their superior amour was worth a thousand tribesmen. As they waded to the shore through the surf, Magellan's helmet was knocked from his head and he swiftly copped a blow. Stumbling, but refusing to abandon his position, he was set upon by the tribesmen and hacked to death. Pigafetta noted when they returned for the body that there was nothing left. "An Indian hurled a bamboo spear into the captain general's face, but the latter immediately killed him with his lance, which he left in the Indian's body. Then, trying to lay his hand on his sword, he could draw it out but only halfway because he had been wounded in the arm with a bamboo spear. When the natives saw that, they all hurled themselves upon him. One of them wounded him on the left leg with a large cutlass, which resembles a scimitar, only larger," the Italian wrote, detailing Magellan's almost Cook-like demise at the hand of natives.

> Magellan named the Patagonia region of Argentina after a mythical race of giants, the Patagons

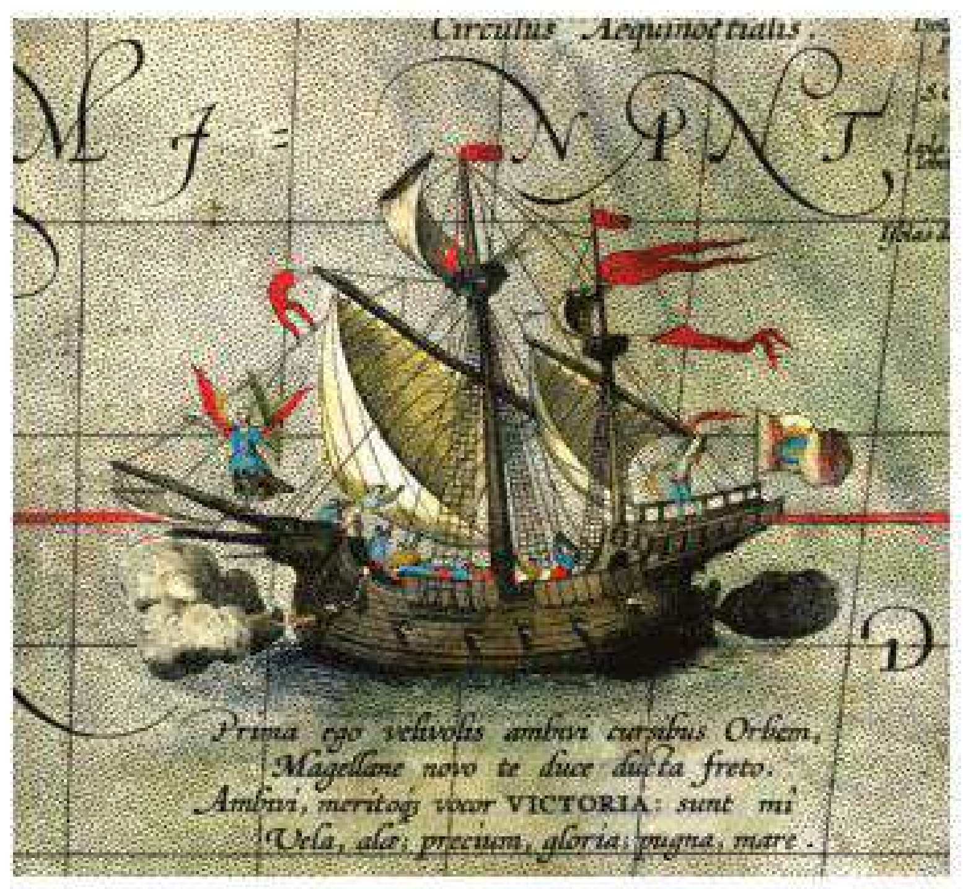
A HERNANDO
DE MAGALLANES
A monument marks the spot Ferdinand Magella had been killed on

Defining moment

Mutiny of captains

Easter 1520

As a Portuguese, Magellan worried his predominantly Spanish crew would treat him with suspicion and disrespect. He was correct. Juan De Cartagena had been plotting a mutiny since the beginning. Several attempts occurred when three captains – Cartagena, Luis de Mendoza and Gaspar Quesada – decided Magellan was leading them to their doom. Underestimating their commander, he counterattacked and won the fight both rounds. Mendoza and Quesada were executed.


Circulus Aequinoctialis
Prima ego velivolis ambivi cursibus Orbem,
Magellane novo te duce ducta freto.
Ambivi, meritoq; vocor VICTORIA: sunt mi
Vela, alæ; precium, gloria; pugna, mare.

Defining moment

There and back again

6 September 1522

Three years after setting off, the sole surviving vessel in Magellan's five-ship flotilla made it home. Like a ghost, the Victoria appeared miraculously out of nowhere and crawled into harbour. Having travelled 60,440km around the world, 232 men had perished from disease and starvation. Magellan was posthumously declared a hero by Spain. Of the original crew only 18 men returned.

1522

Permission granted
King Charles responded favourably to Magellan's plan and grants him funds from the Spanish crown and a host of rights regarding any discoveries he made on the journey. **22 March 1518**

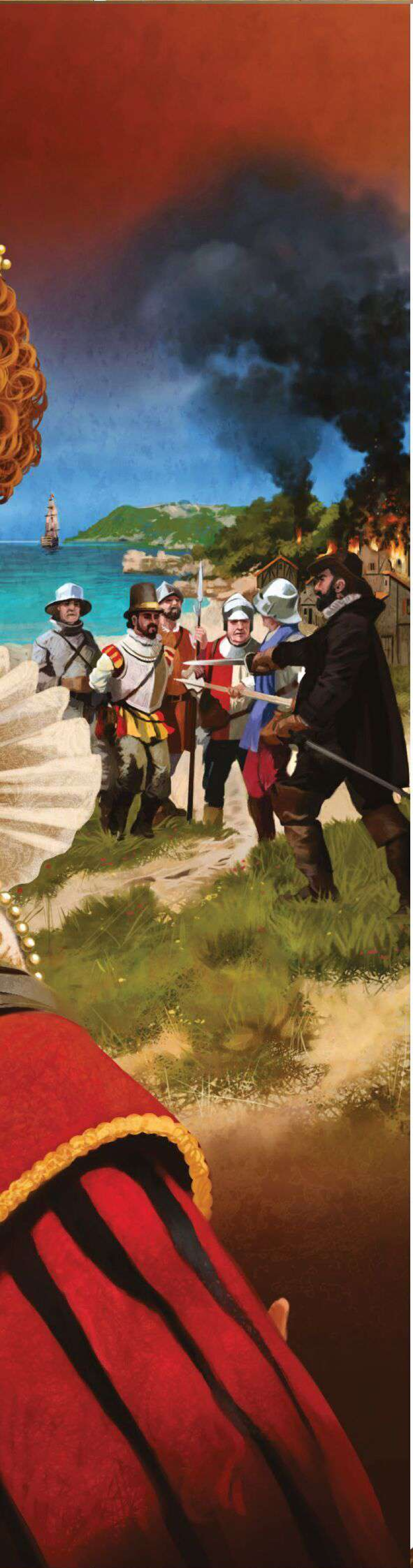
Heading into the unknown
Having left Seville five weeks previous, the flotilla finally set off from Spanish waters. King Manuel, furious at Magellan's plans, sent out ships to search for the fleet. **20 September 1519**

History is made
Having found safe passage through the All Saints' Channel, as they named it, the flotilla reached the South Pacific. Magellan names the ocean Mar Pacifico (Pacific Ocean). **28 November 1520**

Killed in the surf
Magellan, having decided to get involved in local politics, is killed by tribesman on the beach at Mactan. He is struck by a bamboo spear, set upon and hacked to death. **27 April 1521**

© Getty Images, Rex Features

"The risks were high, but the profits, if successful, were even greater"



How Elizabeth's Pirates Stole the Tudor Empire

In the age of exploration, the fate of nations and the fortunes of men were created, sunk and stolen on the open seas

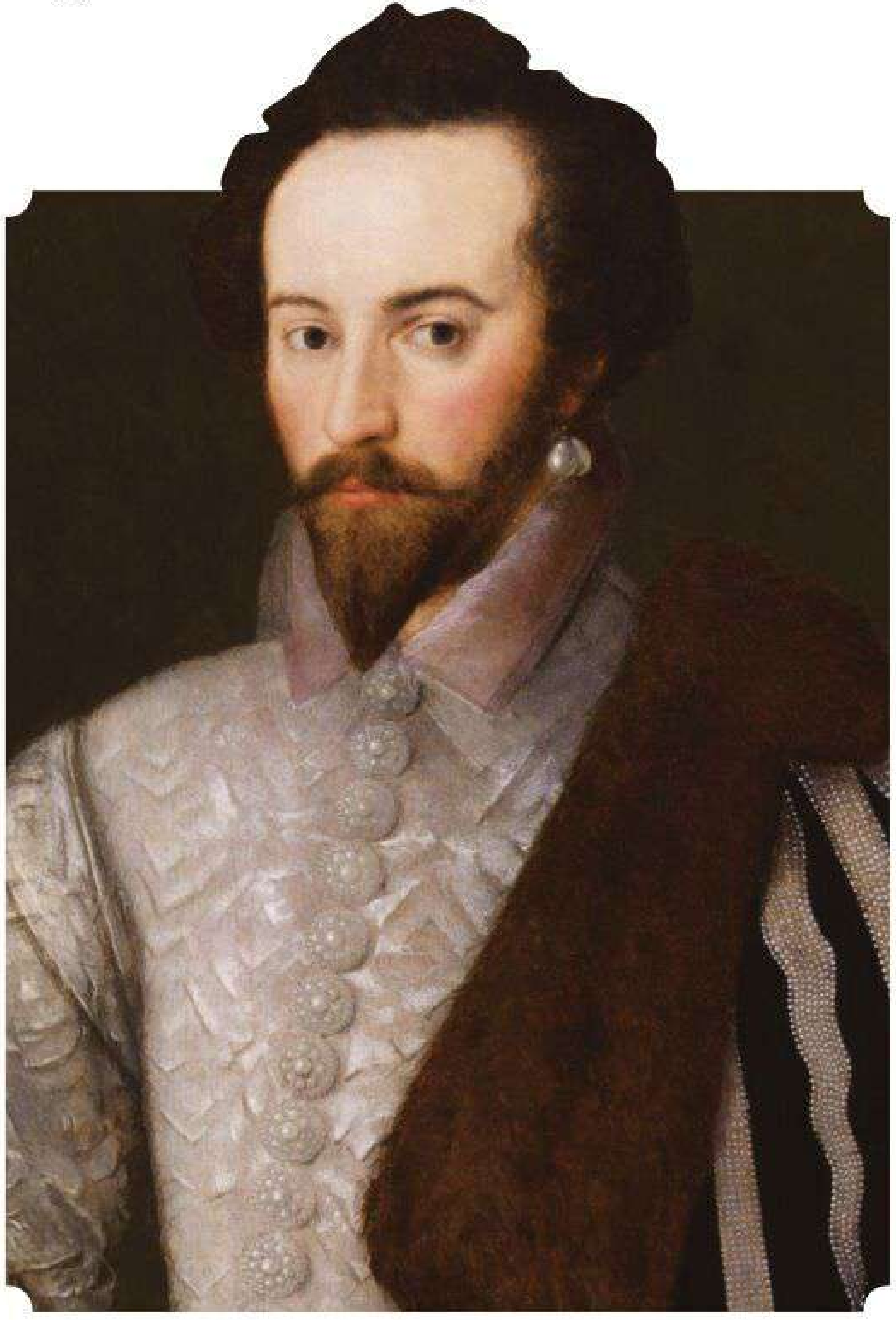
In the years before Elizabeth ascended the throne, England was plagued by internal conflicts. Her father Henry VIII's split from the church had caused England to fall out of favour with Rome, and then the early death of his heir Edward VI prompted a succession crisis. The country had switched from Protestant to Catholic with the rise of Mary I, and those who dared to challenge her were burned in the streets without mercy. While other countries were prospering, England was struggling to maintain order within its own borders. What the country needed was a stable, temperate ruler, one whose reign would allow the nation to flourish; that is what it found in Elizabeth.

A Protestant, but without the extreme beliefs of her father, Elizabeth was tolerant, moderate and wise enough to listen to her counsellors. Finally, with the country somewhat stable, its population was able to look outwards. They discovered that the world had very much moved on without them. Spanish, Italian and Portuguese explorers ruled the waves. Using their sophisticated navigation tools, they had set up powerful and profitable trading roots, and if it didn't act soon, England would find itself isolated and vulnerable.

Armed with new navigation tools, English sailors were finally bold enough to sail beyond the sight of land and into the open sea. The spirit of exploration gripped the nation, which was eager to best the competition, spread Christianity and, most importantly, claim riches. Figures such as Walter Raleigh and Francis Drake, a virtual unknown, became household names after completing valiant voyages for the English crown. As riches began to pour in, more and more ambitious seamen took to the waves eager for a taste of glory, wealth and adventure. The risks were high, but the profits, if successful, were even greater.

It became obvious that true wealth lay in trade and an abundance of chartered companies began to pop up around the country. Making perilous journeys to plant their flags in far-off exotic lands, traders brought a stream of valuable eastern spices, pepper, nutmeg, wine, precious stones, dyes and even slaves pouring into England.

It was an era of exploration, an era of change; a time when a lowly sailor with an adventurous spirit could make his fortune if he was daring enough to take it. There was a new world to explore, and it seemed like the entire world order could change as quickly as the wind.



The pirate knight

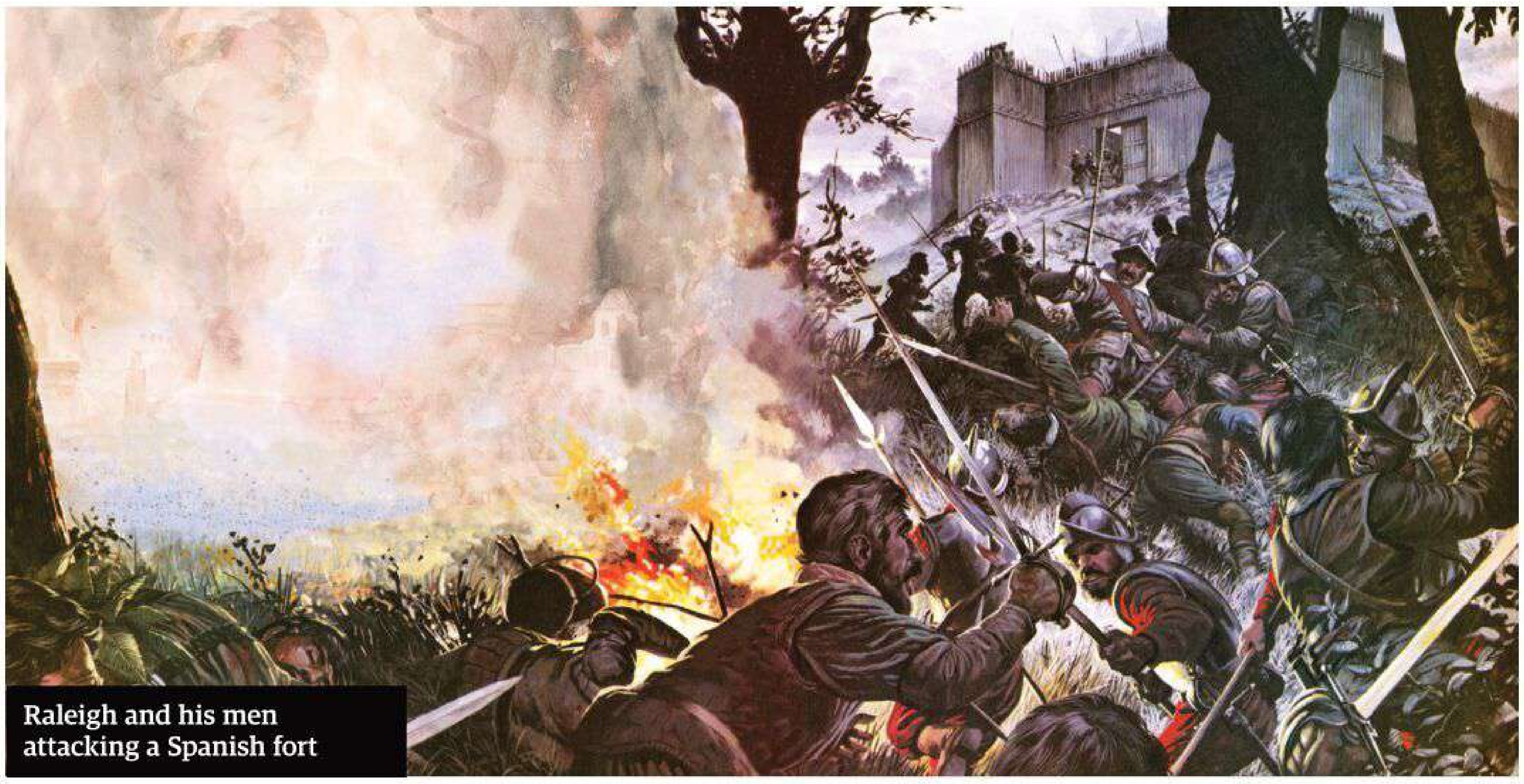
Writer, courtier, spy, Walter Raleigh used his favour with the queen to wipe out his Spanish rivals

The life story of Sir Walter Raleigh is one of glittering highs and devastating lows. It encapsulates how, in the age of exploration, one person's fate could be changed, for better or worse, in an instant.

Born into moderate influence, Raleigh was the youngest son of a highly Protestant family. Educated at Oxford University, it seemed he was set for an academic life, but when the French religious civil wars broke out, he left the country to serve with the Huguenots against King Charles IX of France. However, it was his participation in the Desmond Rebellions in Ireland that would forever alter his life.

When uprisings broke out in Munster, Raleigh fought in the queen's army to suppress the rebels. His ruthlessness in punishing the rebels at the Siege of Smerwick in 1580 and his subsequent seizure of lands saw him become a powerful landowner and, most importantly, it caught the attention of the queen. Oozing natural charm and wit, Raleigh became a frequent visitor to the Royal Court and he soon became a firm favourite of Elizabeth. She bestowed her beloved courtier with large estates and even a knighthood. Her deep trust in Raleigh was demonstrated in 1587, when she made him Captain of the Queen's Guard.

It is no surprise then that when Raleigh suggested colonising America, it was supported whole heartedly by the queen, who granted him trade privileges to do just that. From 1584 to 1589, Raleigh led several voyages to the New World; he explored from North Carolina to Florida and bestowed it with the name 'Virginia' in honour of the virgin queen. His attempts to establish



Raleigh and his men attacking a Spanish fort

Ship's Log

Tudor ships explored the world for riches, but the journey was anything but luxurious

7 February 1595

Rats have infested the ship, making the deck even more uncomfortable and cramped to sleep on. After the vicious winds last night, the sails have been repaired and the water pumped out of the ship. Luckily my backgammon set was not harmed.

15 March 1595

Supplies running low. Hardtack biscuits are completely riddled with maggots and worms but, with nothing else, there is no choice but to eat them. Water no longer suitable to drink, so must survive on beer alone.

18 April 1595

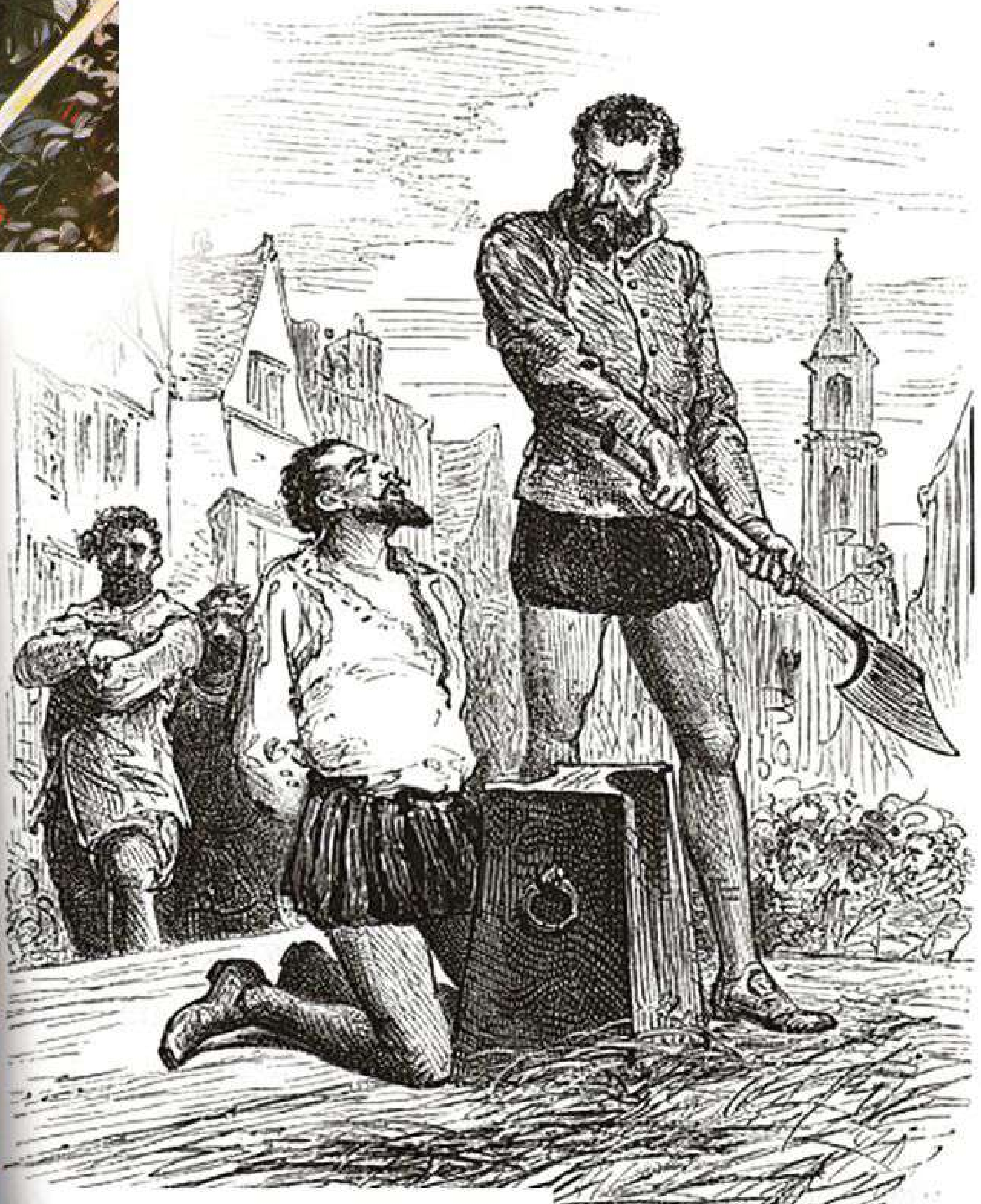
Many of the men have fallen victim to scurvy. The doctor is unable to do much to ease their symptoms. Their teeth are falling out and sores have broken out all over their bodies. Some cases became so severe that several men have died. We threw the corpses overboard.

2 June 1595

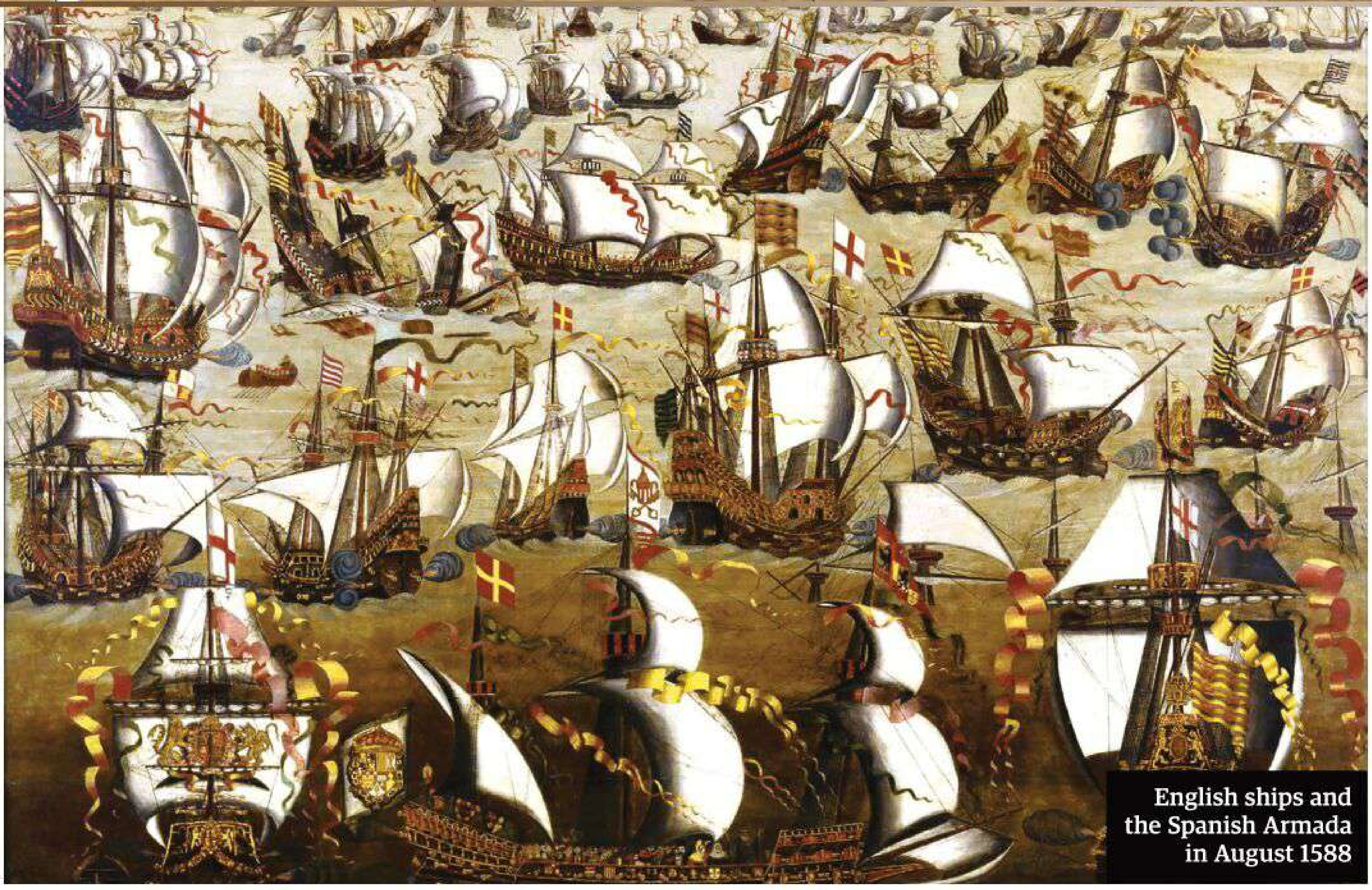
The men are getting restless and rebellious. One had to be flogged after speaking back to an officer. Another was keelhauled – tied to a line looped around the ship, thrown overboard and dragged under the vessel. The barnacles cut him up so terribly that he lost an arm.

29 June 1595

Saw some driftwood today, and another officer informed me he saw a seabird. We may be close to land. This completely contradicts the map we were given (again), so new instructions will need to be drawn up if land is spotted.



It is said that after his death, Raleigh's wife kept his embalmed head with her in a velvet bag



English ships and the Spanish Armada in August 1588

colonies, however, ended in failure. His settlement at Roanoke Island especially was a disaster, as the entire colony mysteriously disappeared, their fate unknown to this day.

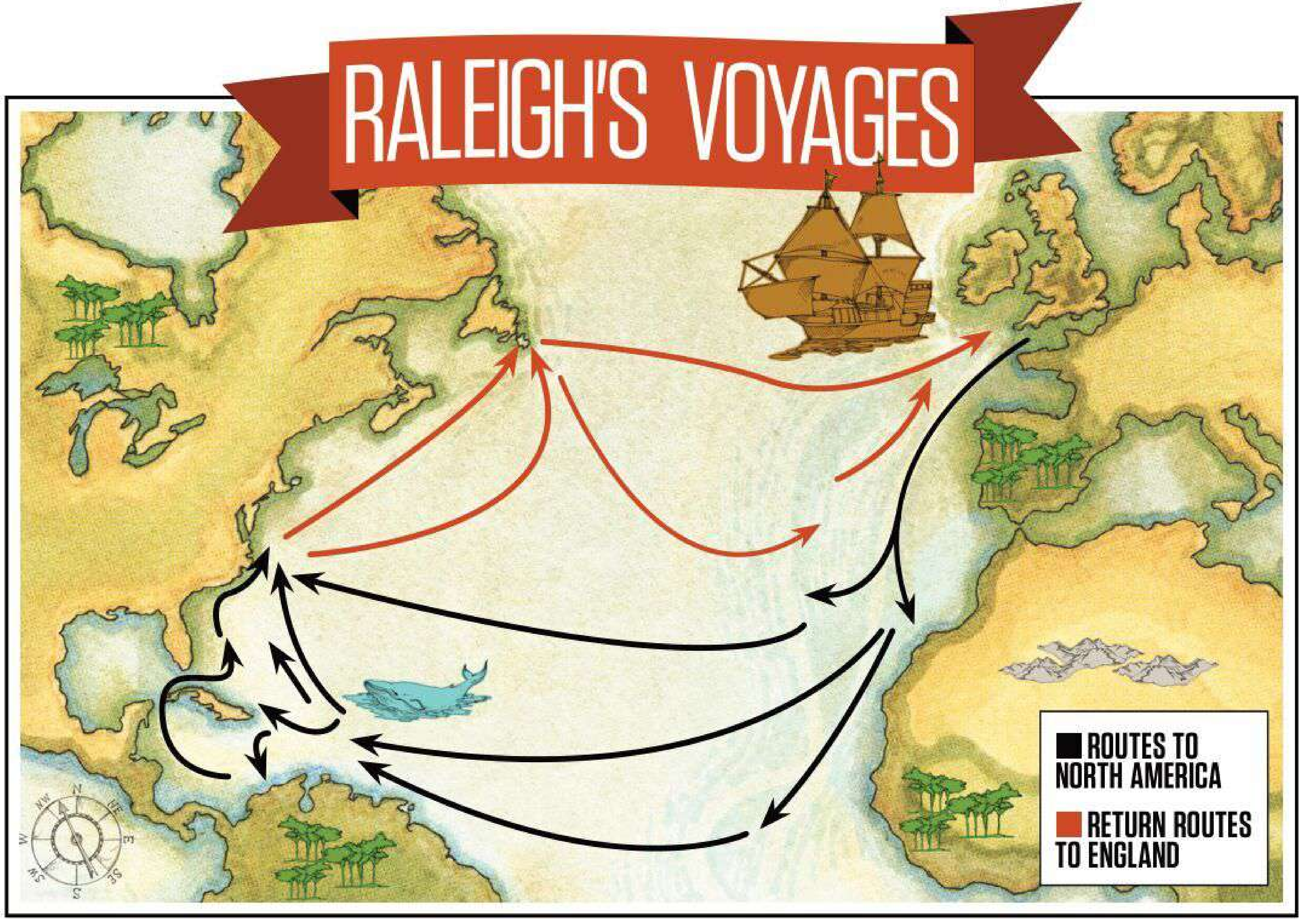
The Roanoke colony was not the only one to experience a disastrous end – Raleigh's relationship with the queen was destroyed when she discovered his secret marriage to one of her own ladies in waiting. Not only was she 11 years younger than him, but she was also pregnant. Furious that he had failed to obtain her permission, and likely a little jealous, Elizabeth had Raleigh imprisoned and his wife cast out of court.

Upon his release, Raleigh was eager to reclaim favour with the monarch so led a mission to search for the legendary city of gold – El Dorado. Although his accounts would claim otherwise, he did not find the city of legend, but instead explored modern-day Guyana and Venezuela. His attack on the powerful Spanish Port of Cadiz and attempts to destroy the newly formed Spanish Armada helped to gradually win back favour with Elizabeth.

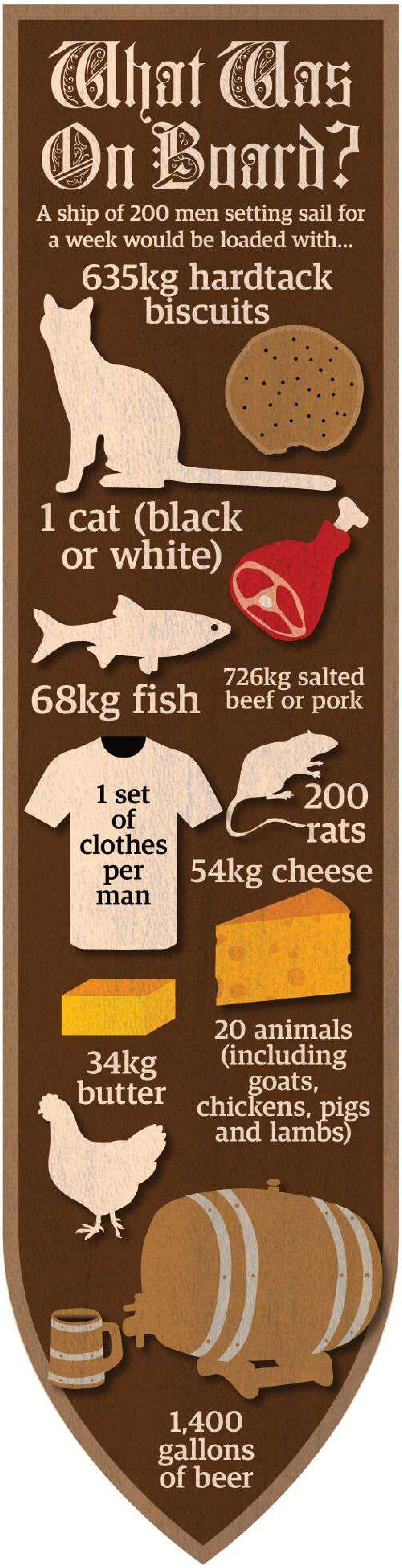
When Elizabeth died and James I came to the throne in 1603, Raleigh must have realised his time was up. His ruthless spirit and charm had won him a soft spot in the English queen's heart, but the Scottish king took an immediate dislike to him. Raleigh was arrested and imprisoned in the Tower of London less than a year after James's ascension. He was found guilty of treason, but was spared from his death sentence and committed to life imprisonment. In 1616 he was released by the money-hungry king to, yet again, search for the fabled city of gold, which his own accounts had helped make into a legend.

During the expedition, he disobeyed James's orders and attacked a Spanish outpost. Spain was furious, and in order to appease them, James had no choice but to punish the rebellious adventurer. Raleigh was re-arrested and his sentence was finally carried out. Bold and cunning to the end, Raleigh reportedly said to his executioner: "This is sharp medicine, but it is a cure for all diseases. What dost thou fear? Strike, man, strike."

RALEIGH'S VOYAGES

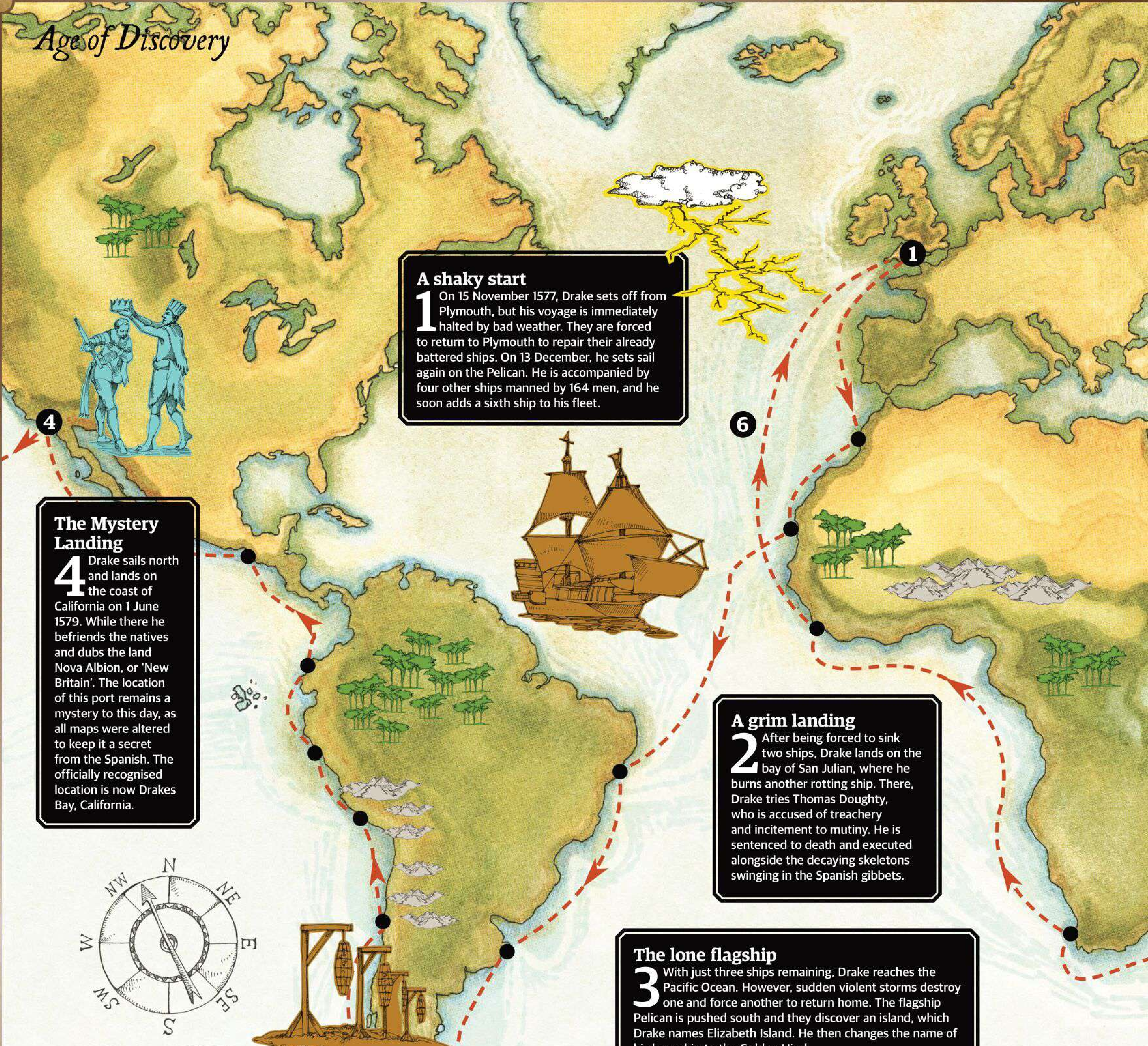


What Was On Board?



A ship of 200 men setting sail for a week would be loaded with...

- 635kg hardtack biscuits
- 1 cat (black or white)
- 68kg fish
- 726kg salted beef or pork
- 1 set of clothes per man
- 200 rats
- 54kg cheese
- 34kg butter
- 20 animals (including goats, chickens, pigs and lambs)
- 1,400 gallons of beer



A shaky start

1 On 15 November 1577, Drake sets off from Plymouth, but his voyage is immediately halted by bad weather. They are forced to return to Plymouth to repair their already battered ships. On 13 December, he sets sail again on the Pelican. He is accompanied by four other ships manned by 164 men, and he soon adds a sixth ship to his fleet.

The Mystery Landing

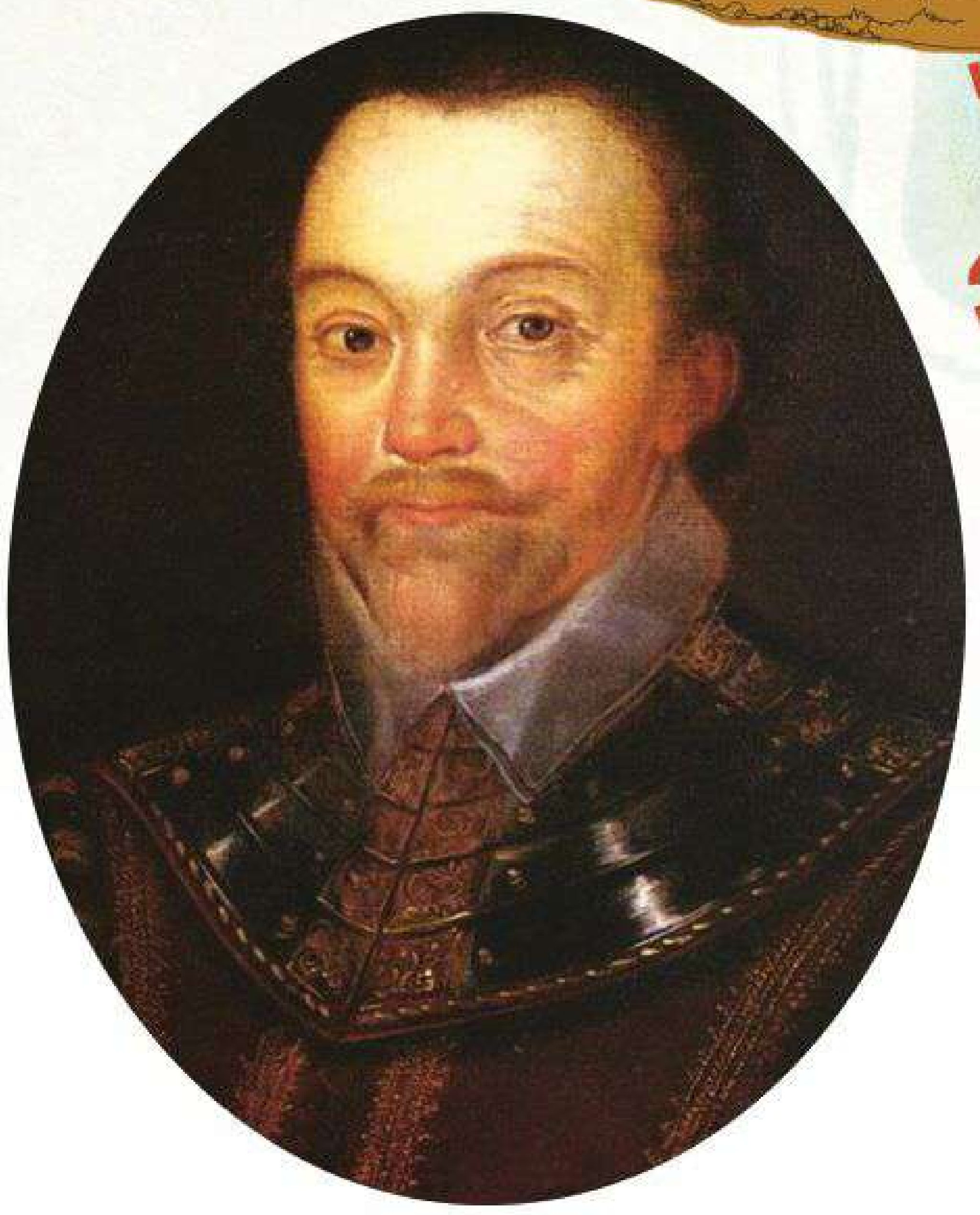
4 Drake sails north and lands on the coast of California on 1 June 1579. While there he befriends the natives and dubs the land Nova Albion, or 'New Britain'. The location of this port remains a mystery to this day, as all maps were altered to keep it a secret from the Spanish. The officially recognised location is now Drakes Bay, California.

A grim landing

2 After being forced to sink two ships, Drake lands on the bay of San Julian, where he burns another rotting ship. There, Drake tries Thomas Doughty, who is accused of treachery and incitement to mutiny. He is sentenced to death and executed alongside the decaying skeletons swinging in the Spanish gibbets.

The lone flagship

3 With just three ships remaining, Drake reaches the Pacific Ocean. However, sudden violent storms destroy one and force another to return home. The flagship Pelican is pushed south and they discover an island, which Drake names Elizabeth Island. He then changes the name of his lone ship to the Golden Hind.



For many historians, Sir Francis Drake is the physical embodiment of the glories of Tudor England. But Drake himself was an atypical hero of his time. His birth was viewed as so unremarkable that no one is sure exactly when it was. He came from an ordinary family; he was the eldest of 12 sons, and his father was a farmer. When the Catholic Queen Mary began to persecute Protestants, the family fled from Devonshire to Kent. It seemed that fate itself wished to place Drake on a ship, as he was apprenticed to their neighbour, and when the old, childless sailor died, he left his ship to his favourite pupil.

By the 1560s, the young Drake was making frequent trips to Africa. There, he would capture slaves and sell them in New Spain. This was against Spanish law and in 1568 his fleet was trapped by Spaniards in the Mexican port of San Juan de Ulua. Although Drake managed to escape, many of his men were killed. This incident instilled a deep hatred in Drake towards the Spanish crown that would last throughout his entire life.

In 1572 he received a privateer's commission from Elizabeth and set his sights on plundering any Spanish ship that crossed his path. He targeted wealthy Spanish-owned port towns and settlements, attacking them and claiming as much gold and silver as he could load on to his ships. It

Dragon of the seas

The Spanish had circumnavigated the globe decades before, but English explorer Francis Drake threatened to destroy their success

The Hind lives on

5 Drake reaches a group of islands in the southwest Pacific known as the Moluccas. After a close shave in which the Golden Hind is almost lost after being caught on a reef, Drake befriends the sultan king of the islands.

The valiant return

6 On 26 September 1580, the Golden Hind finally returns to Plymouth with Drake and the 59 remaining crewmembers onboard. The queen receives half of the treasures and spices loaded onto the ship. In return, Elizabeth gives Drake a jewel with her miniature portrait, now known as the 'Drake Jewel'.

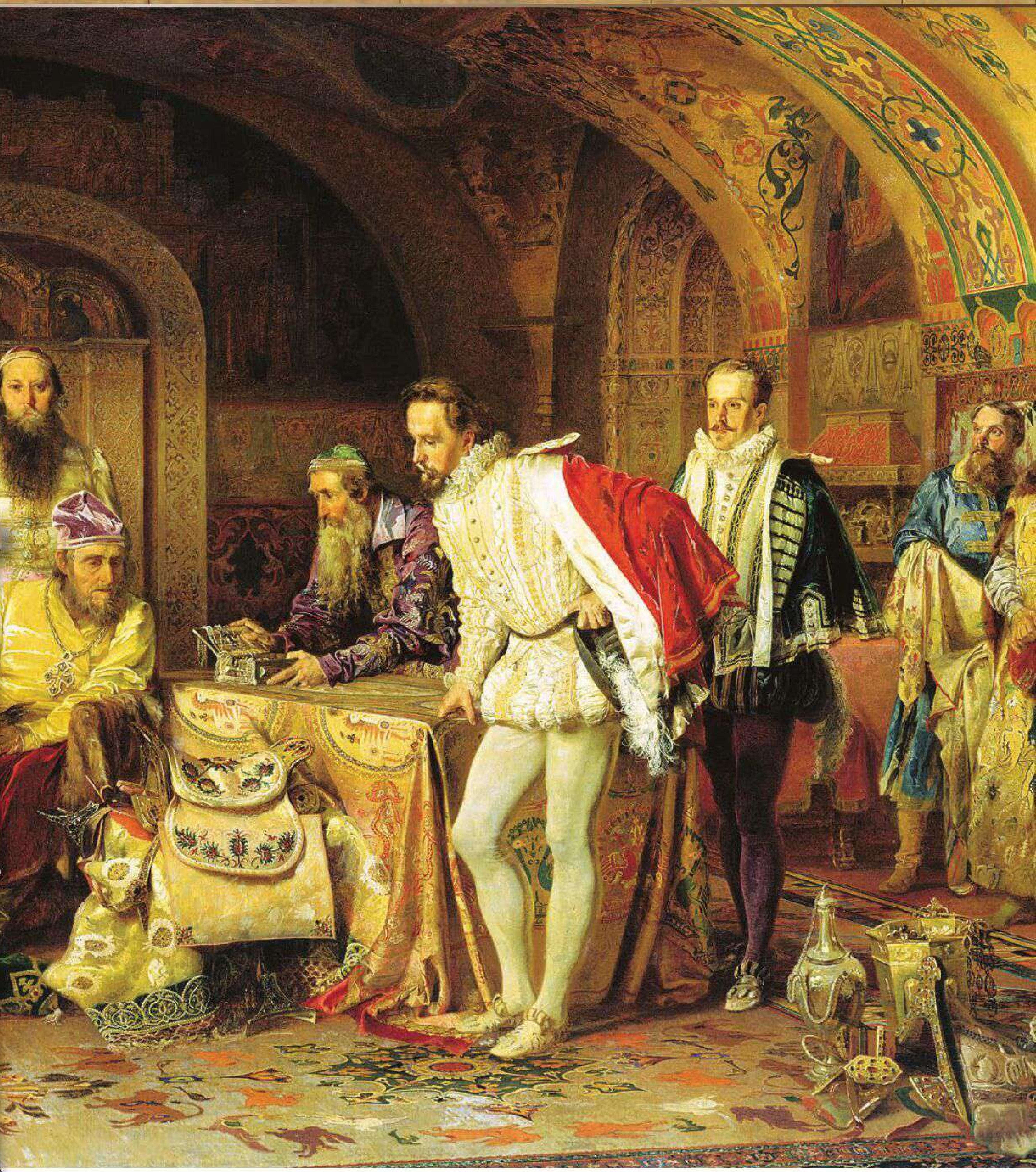
TUDOR NAVIGATION

Although Tudor sailors liked to paint themselves as masters of the seas, their navigation tools were rather primitive and a lot of guesswork was involved. Maps did exist, but they were often incorrect, as much land was undiscovered. Compasses were used for direction and an instrument called a nocturnal was used to determine the alignment of the stars, which helped to calculate tides. The term 'knots' came from a Tudor method to calculate the speed of a ship – a piece of wood attached to a rope with knots in it was cast out and the knots counted as they passed through a sailor's fingers. Another sailor used a sandglass to determine how many knots were travelled in a period of time.

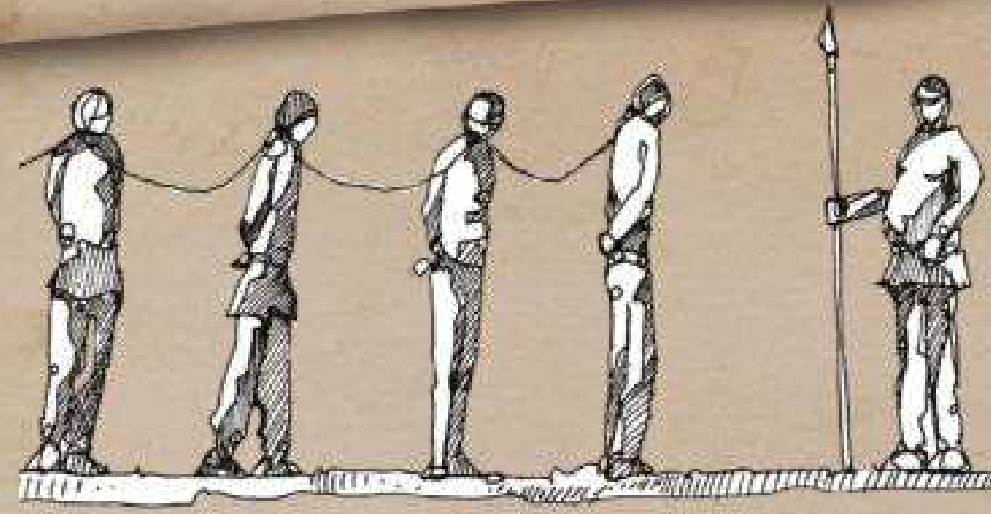
was Drake who, when discovering that he had too much gold to carry, decided to bury it and reclaim it later. This was not the only comparison made between Drake and pirates. Although in England his success had seen him become a wealthy and respected explorer, this was not the case in Spain. To the Spaniards whose ships he had plundered, Drake became a bloodthirsty figure to be feared; they even gave him the terrifying nickname 'El Draque' – the Dragon.

Dragon or not, the daring and bountiful voyages of the English adventurer had impressed Queen Elizabeth I. He perfectly epitomised the kind of pioneering English spirit that she felt her country needed to ensure it became a major world power. In 1577, she sent Drake on an expedition against the Spanish along the Pacific coast of South America. He raided the Spanish settlements in his usual ruthless style and, after plundering Spanish ships along the coasts of Chile and Peru, he landed in California and claimed it for his queen. His journey continued through the Indian Ocean and when he finally returned to England on 26 September 1580, he became the first Englishman to circumnavigate the world. This delighted the queen, but what pleased her even more were the pretty jewels he bestowed her with. In a move that insulted the king of Spain, she dined onboard the explorer's ship, bestowed him with a jewel of her own and gave him a knighthood.

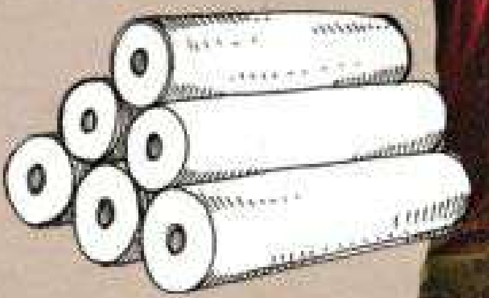
Drake's formidable success at the expense of Spain did not end there. In 1588 he was made vice admiral of the Navy, and when 130 Spanish Armada ships entered the English Channel, he fought them back with relish. Now, he wasn't only a wealthy explorer and royal favourite, he was also a war hero. However, in 1596 his luck finally ran out. The queen requested him to engage his old enemy Spain one last time and in a mission to capture the Spanish treasure in Panama, Drake contracted dysentery and died. His body was placed in a lead coffin and cast out to sea. His enduring legacy remains, and to this day divers continue to search for the coffin of the man who led Elizabethan England to glory.



The Muscovy Company's demands to close Russian trade to other European powers were met with anger by Ivan IV



Trade invoice



Slaves - Africa

Oriental spices: cinnamon, cloves, peppers - China and India

Currants: dried wine grapes - Eastern Mediterranean

Wine - Eastern Mediterranean

Cotton - Eastern Mediterranean

Silk - Eastern Mediterranean

Cordage - Russia

Hemp - Russia

Furs - Russia

Carpets - Turkey

Silk - Persia

Fruit - Mediterranean

Sugar - North Africa

Treasures of the empire

A world full of riches awaited to make England a wealthy and powerful nation once again

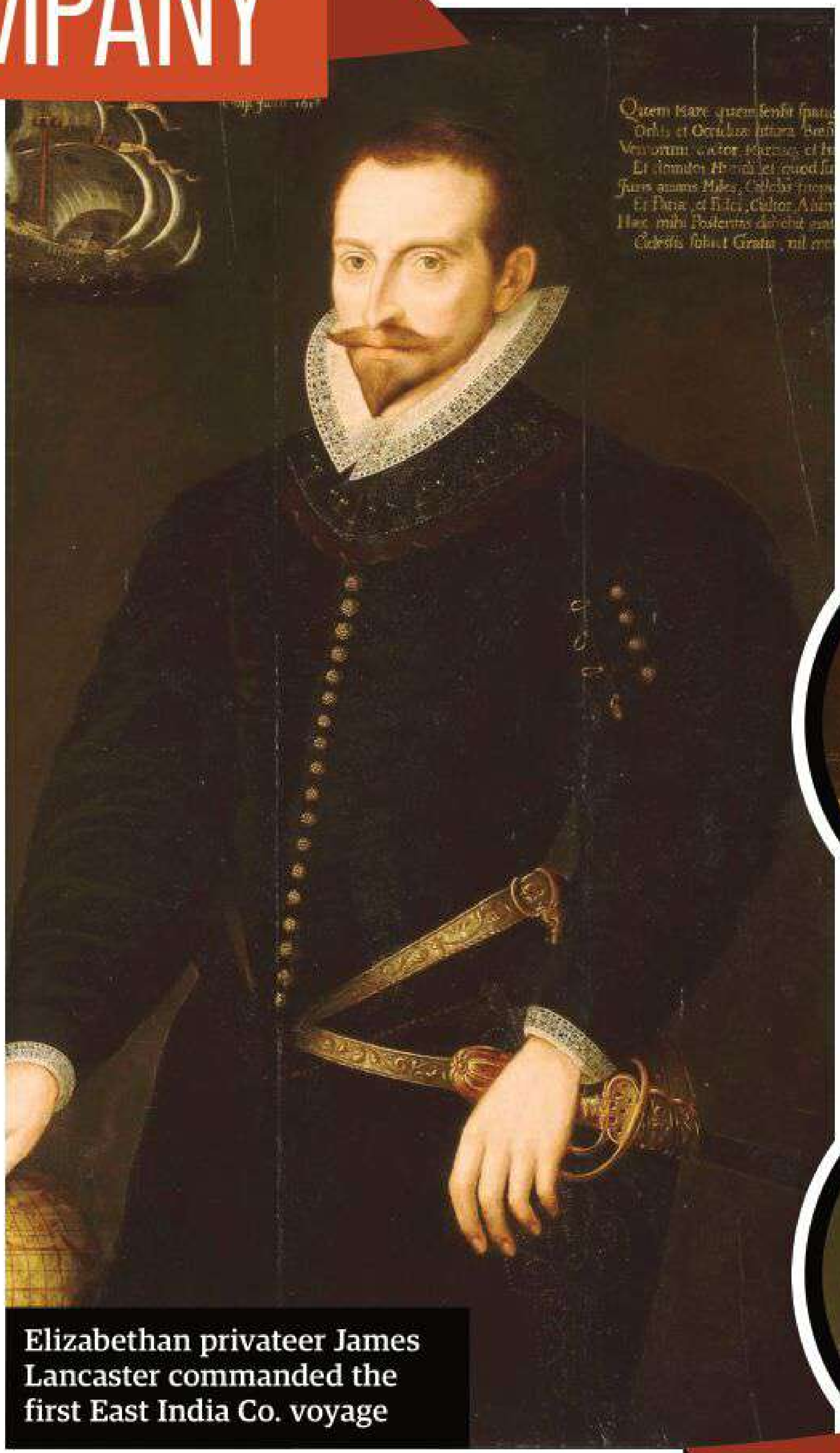
When it came to trade, England had some catching up to do in order to stand with the rest of the world. For a long time, Italian spice and dye traders dominated, but the Italian trade monopoly was finally broken by Spain and Portugal. In their efforts to loosen the Italian grip on trade, these traders discovered sea routes to the Indies and the hugely valuable spices that lay beyond. England looked on greedily as Spain grew wealthier and became determined to share in the riches that were on offer in the New World. If England failed to get a foothold in the exploration of the New World, its European rivals would leave it behind and the nation would be left vulnerable. Trade didn't just mean riches anymore – it meant the country's survival.

After an English spy gained a copy of *Breve Compendio De La Sphera*, a secret Spanish textbook that held the secrets to success at sea, craftsmen began designing new instruments and English explorers were finally ready to take to the waves. Queen Elizabeth supported the voyages of these intrepid explorers and expressed that she would not disapprove if they were to take advantage of richly laden Spanish ships while doing so. Soon, English adventurers gained a reputation for piracy, although the raids were conducted not by pirates but by 'privateers'. Spanish ships in the Caribbean trembled in terror upon the sight of an English galleon on the horizon. A new world was dawning, and using their cunning, daring and ruthlessness, English traders would come to rule it.

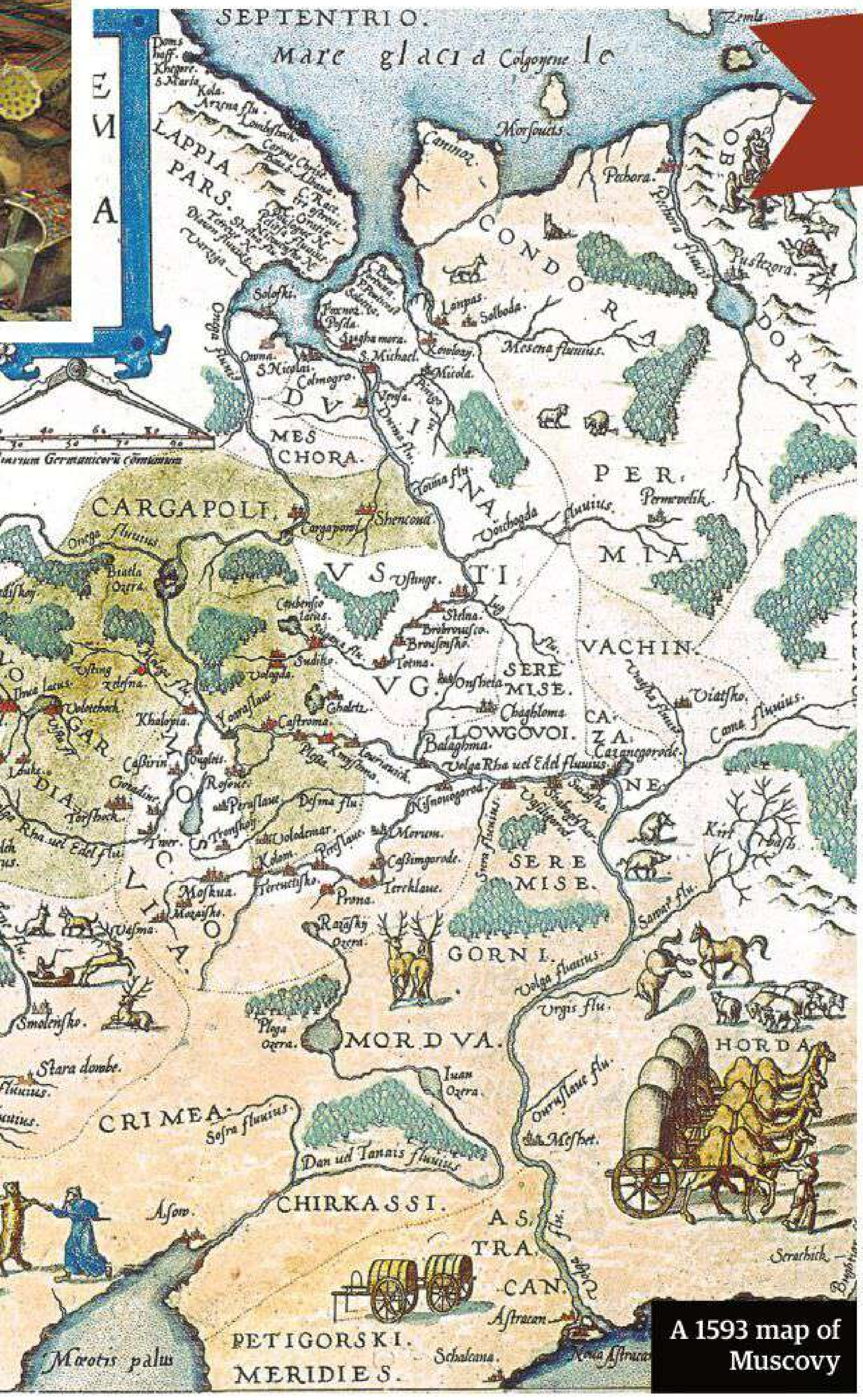
THE EAST INDIA COMPANY

The tiny English company that came to control half of all the world's trade

When Queen Elizabeth granted a Royal Charter to the traders that would become the East India Trading Company, it's doubtful she could foresee the impact it would have upon the world. The 15-year charter permitted the fledgling company a monopoly on trade with countries east of the Cape of Good Hope and west of the Straits of Magellan, but they were motivated by one thing – spices. But the Dutch East India Company had the monopoly and the small English company had to work from the bottom up, slowly gaining income and respect. Eventually the company's trade in spices, cotton and silk saw profits pour in. Just 47 years after its creation, the little business morphed into a giant. For many, the pioneering nature of the company was symbolic of the spirit of exploration, tearing down the barriers of the world. But as the company became more powerful, its ambitions grew in kind. The initial focus on trade morphed into dangerous colonial aspirations that would lead to the company's eventual downfall.



Elizabethan privateer James Lancaster commanded the first East India Co. voyage



A 1593 map of Muscovy

EXPANDING EAST

The East India Company weren't the only English traders to rule the seas

Although the East India Trading Company was a major player in the arena of English trade, many other companies were making waves worldwide. The first major chartered joint stock company was the Muscovy Company, focusing on trade between England and Muscovy, modern-day Russia. Trading with this mysterious state in the frozen tundra involved perilous journeys that left one crew frozen, but when Richard Chancellor finally made it to Moscow he found a market eager to trade. English wool was exchanged for Russian fur and an array of valuable goods. The Muscovy Company even led to a marriage proposal from Ivan the Terrible to Elizabeth.

Another major English chartered company was the Levant, or Turkey, Company, drawn to the Ottoman empire by the lure of exotic spices. The Levant Company amassed a small fortune trading in silk and valuable currants. What set the Levant Company apart was that the leaders never appeared to have colonial ambitions, instead working closely with the sultan. This allowed for a relationship of mutual benefit.

Forgotten Tudor Explorers

The men whose voyages carved the world for England

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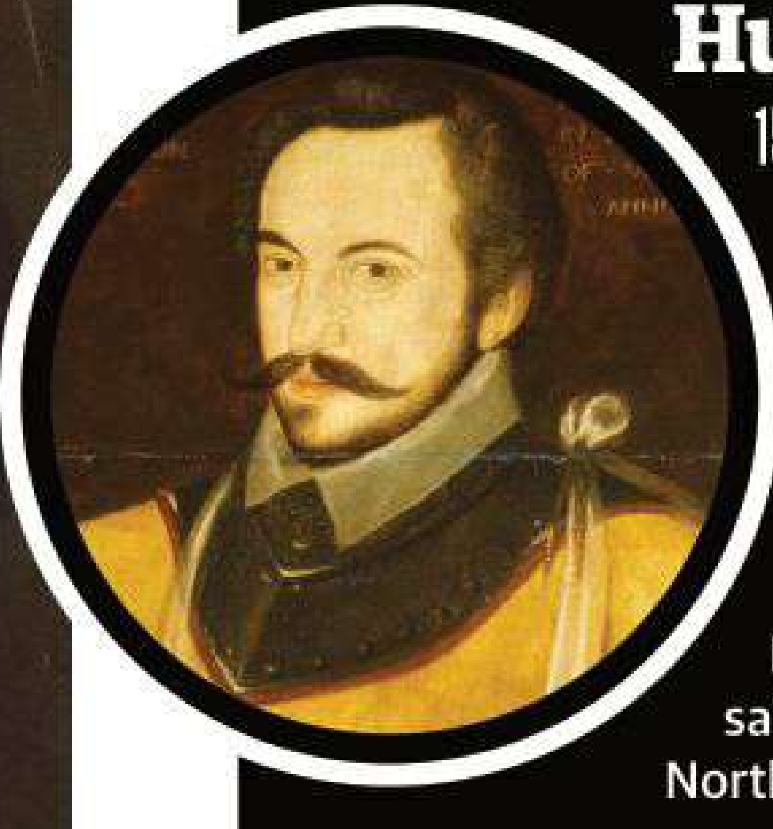

Humphrey Gilbert

1539-1583

Half brother of Sir Walter Raleigh, Gilbert's voyages established St John's Newfoundland, the most eastern province of Canada, in 1583. An early pioneer of the English colonial empire in North America, Gilbert initially sailed to find a sea route through North America to Asia.

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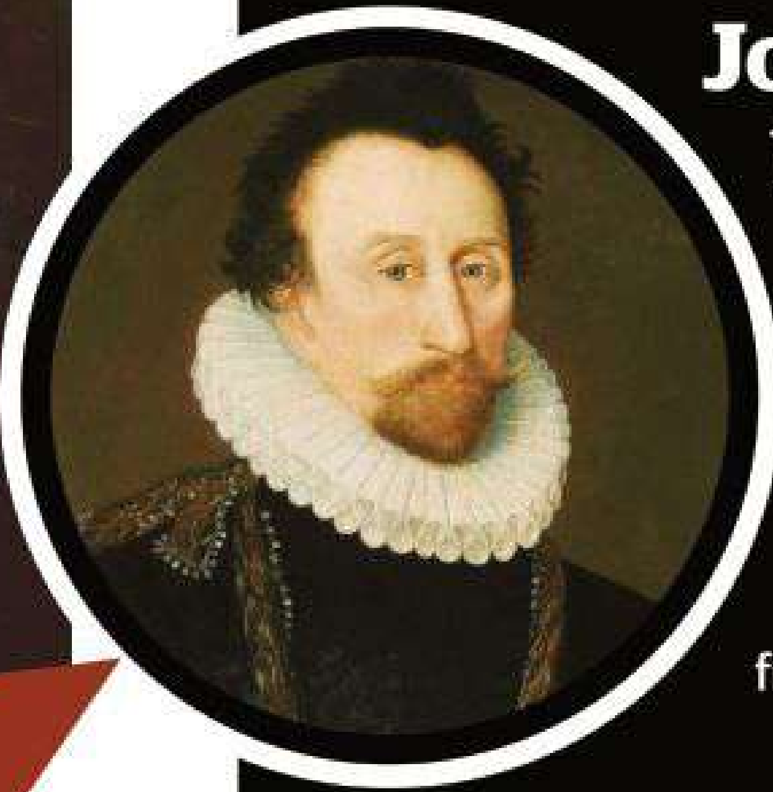

John Hawkins

1532-1595

Cousin of Francis Drake, Hawkins was not only chief architect of the Navy but also conducted several voyages to West Africa and South America. Hawkins was a trade pioneer and made a huge profit from the slave trade.

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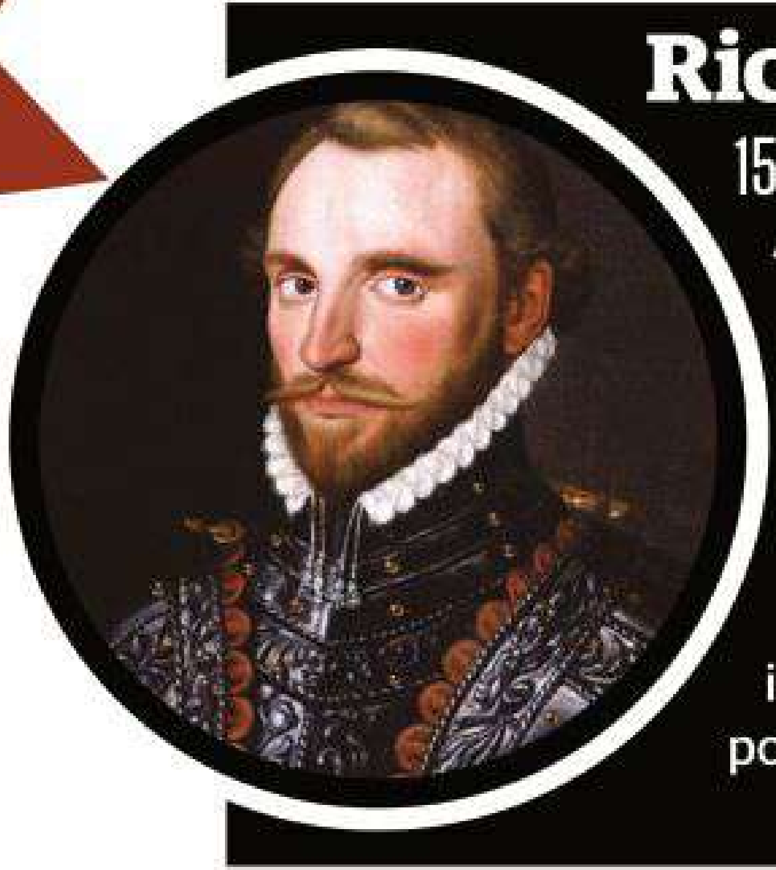

Richard Grenville

1542-1591

An English war hero, Grenville was a major part of early attempts to settle in the New World. He attempted to set up colonies in Roanoke Island and his daring death aboard his ship Revenge is immortalised in Tennyson's poem *The Revenge*.

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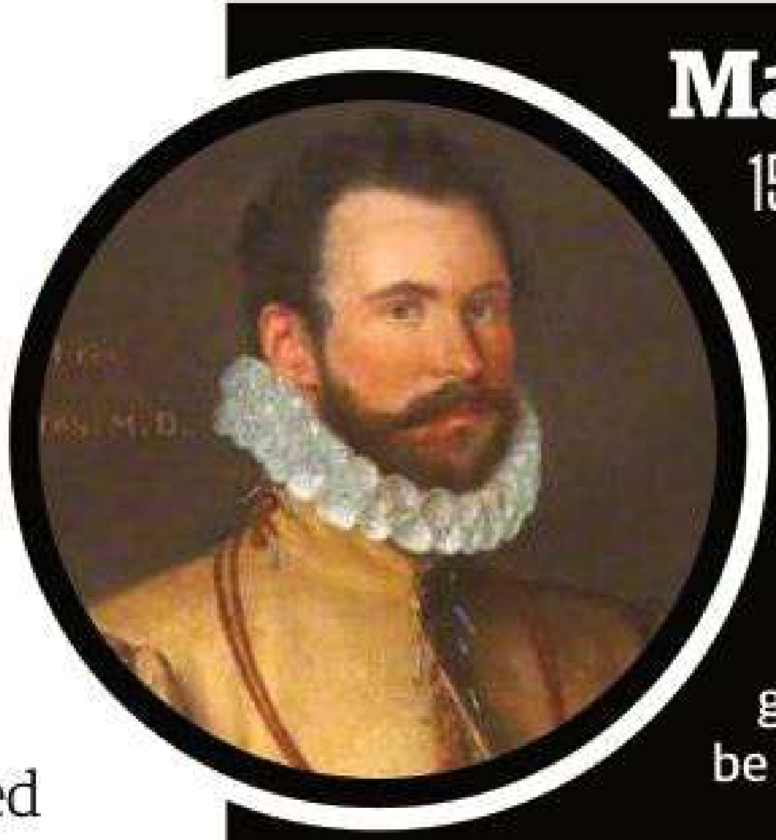

Martin Frobisher

1535/1539-1594

Frobisher was determined to find a north-west passage as a trade route to India and China, and made three voyages in an effort to do so. The privateer collected what he believed was 1,550 tons of gold, but actually turned out to be worthless iron pyrite.

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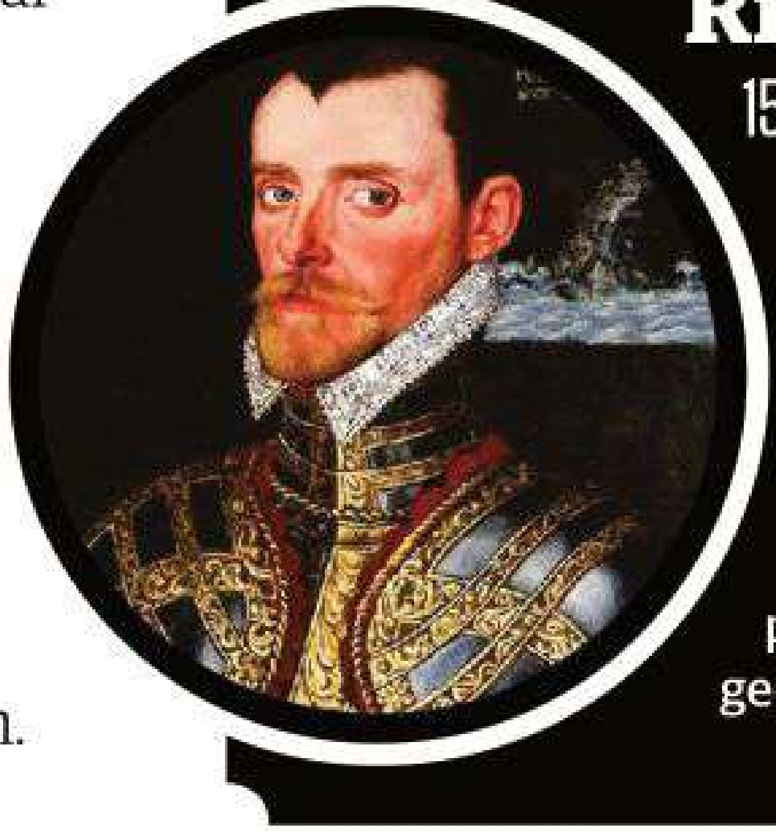


Richard Hawkins

1562-1622

Son of John Hawkins, he set sail to prey on the possessions of the Spanish crown in South America. Although his plundering of Spanish towns strongly suggest otherwise, he maintained that the purpose of the expedition was geographical discovery.

© Alamy; Look & Learn; Joe Cummings; Abigail Daker

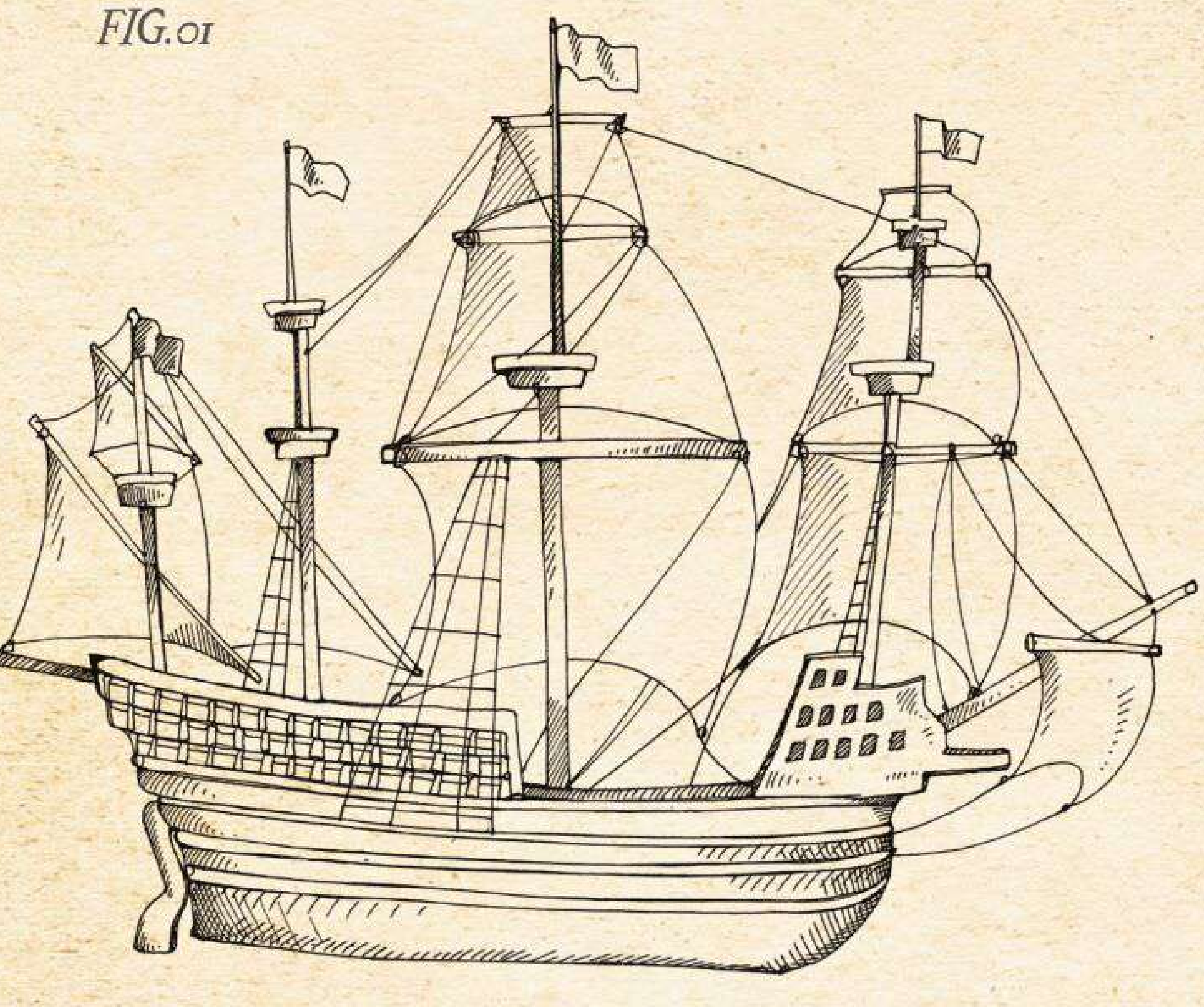
TIME TRAVELLER'S HANDBOOK

Tudor Voyage

England, 1485-1603

The common perception of England is as one of the strongest sea-faring nations in history. In the Tudor era, that couldn't be further from the truth. Spanish ships dominate the sea, and England has only a fledgling navy. Many sailors remain within sight of the coast and are hesitant to venture out into the open ocean. Stronger nations boast advanced navigational equipment and skills, and are plundering far-off lands; England has to catch up. A life at sea offers sailors a chance at fame and fortune, as well as the thrill of adventure, but doesn't come without risk. Conditions on Tudor ships are cramped, smelly and dangerous, and voyages can take years to return, if they do at all. Much of a sailor's fate is down to chance, but there are steps you can take to increase your chances of survival.

FIG.01



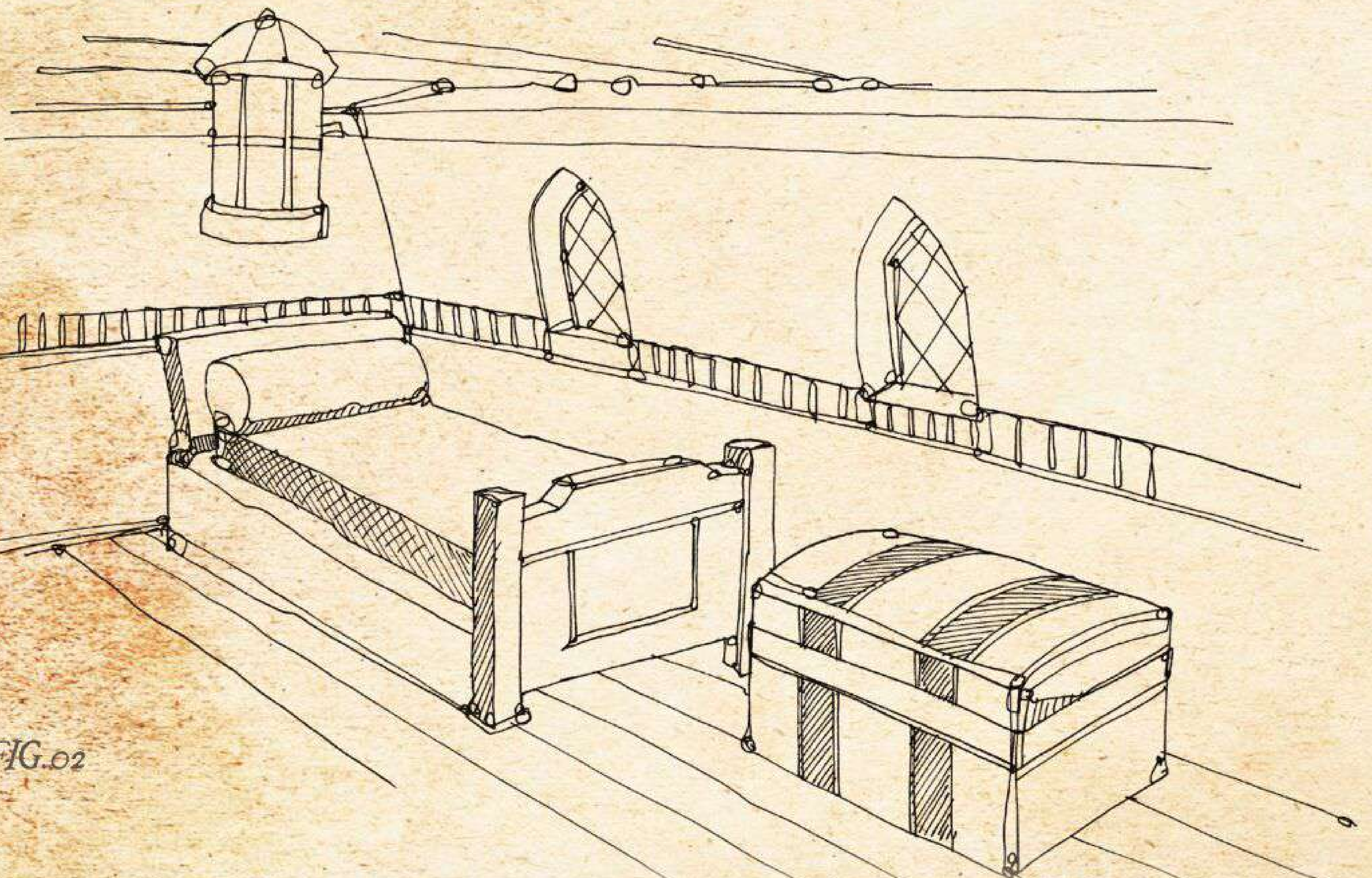


FIG.02

WHERE TO STAY

Conditions on board for ordinary sailors are not exactly luxurious. Seamen have to share one room or even sleep on the deck. In these tiny, cramped spaces there is barely enough room to lie down and no windows. Considering each sailor only has one set of clothes, the smell isn't exactly pleasant either. Not only is this uncomfortable, but it's a breeding ground for infection and disease. The best place to sleep on the ship would be a captain's or officer's cabin. If you manage to obtain one of these, you'll have your own space to sleep in. Just don't expect anything fancy – in these ships, space is at an absolute premium, so having your own place to lie down is a luxury.

Dos & Don'ts

✓ **Follow rules.** Punishments are very harsh for lawbreakers, including keelhauling – being dragged beneath the ship.

✓ **Try and eat some fruit and vegetables.** This will provide you with the essential vitamin C able to keep scurvy at bay. Some captains actually worked this out before it was scientifically 'discovered'.

✓ **Enjoy your free time.** Sailors play games such as backgammon, dice games and even entertain each other with musical instruments such as tabor pipes.

✓ **Look after your belongings.** In such cramped conditions it's easy for items to go missing. Many sailors mark their property with their initials or some kind of graffiti to identify it.

✗ **Fall overboard.** Surprisingly, not many sailors can swim, and there is superstition around saving anyone who falls in.

✗ **Be afraid of animals.** Not only do ships carry livestock on board for food, but most are also infested with rats and mice.

✗ **Expect a good night's sleep.** Hammocks will not be introduced in English ships until 1596.

✗ **Make long-term plans.** The life expectancy of sailors is desperately low. It seems that luck plays as equal a part in a sailor's chances of survival as skill.

WHO TO BEFRIEND

The cook

One of the biggest killers on board Tudor boats is starvation and disease due to lack of a balanced diet. Although fresh food is initially taken on board, this quickly runs out and sailors have to make do with salted fish and meat and hard baked biscuits, which often the maggots get to before the sailors. Although befriending the ship's cook won't help you fight off scurvy – a condition caused by lack of vitamin C – it certainly can't hurt to win the favour of the person in charge of handing out meals.

Extra tip: The ship's surgeon could be your best friend or worst enemy: he is well equipped to remove foreign objects but has basically no weapons against infectious diseases.

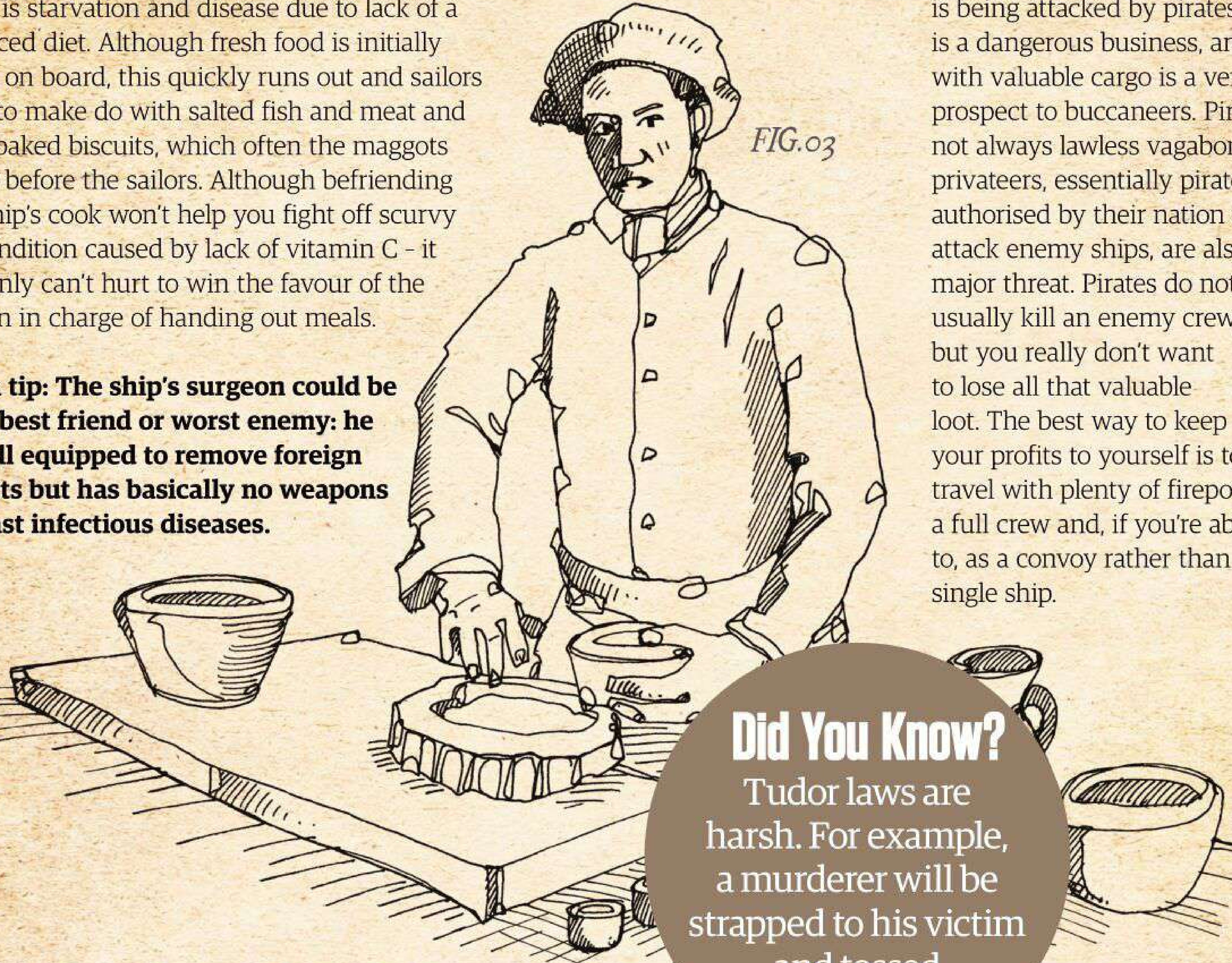


FIG.03

WHO TO AVOID

Pirates

One of the biggest threats in the Tudor era is being attacked by pirates. Exploration is a dangerous business, and a ship laden with valuable cargo is a very appealing prospect to buccaneers. Pirates are not always lawless vagabonds: privateers, essentially pirates authorised by their nation to attack enemy ships, are also a major threat. Pirates do not usually kill an enemy crew, but you really don't want to lose all that valuable loot. The best way to keep your profits to yourself is to travel with plenty of firepower, a full crew and, if you're able to, as a convoy rather than a single ship.

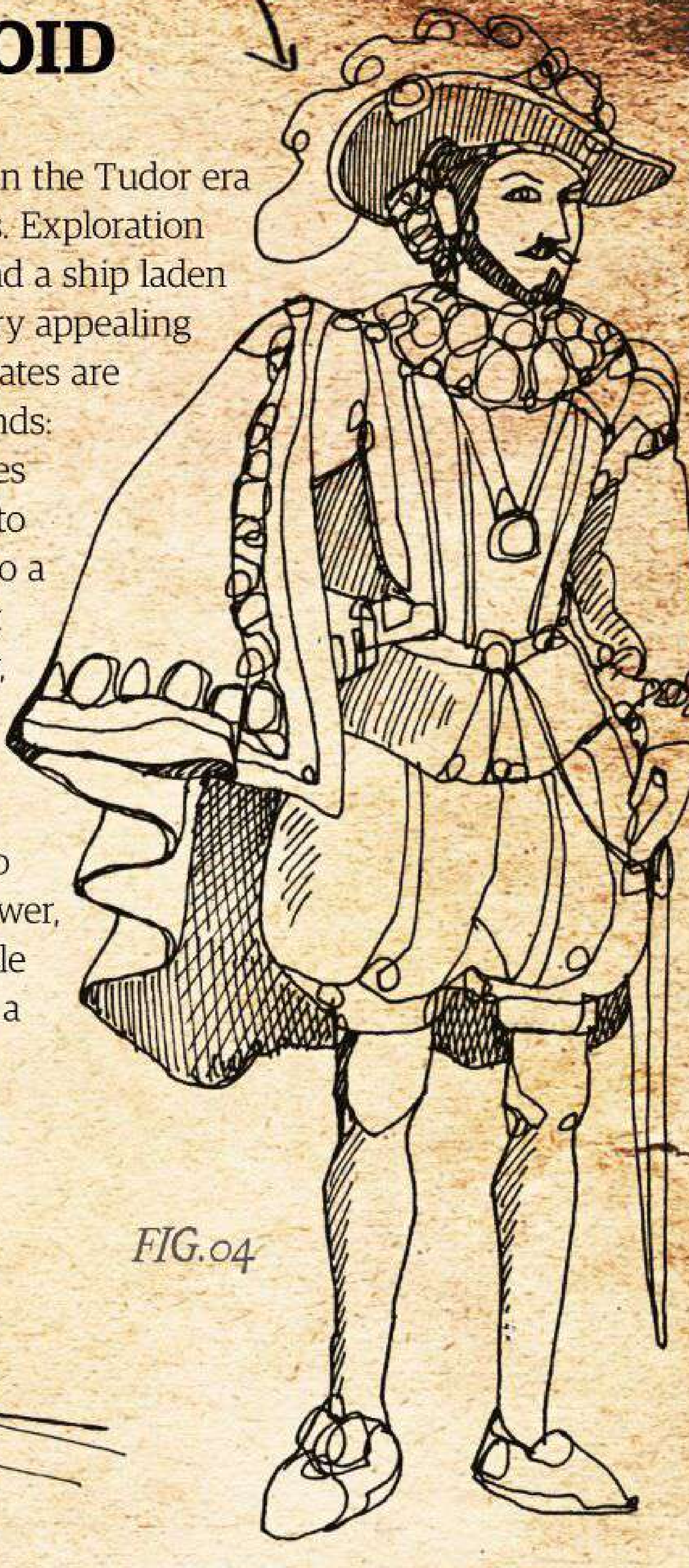


FIG.04

Did You Know?

Tudor laws are harsh. For example, a murderer will be strapped to his victim and tossed overboard

Helpful Skills

Mastering these key skills is vital to your survival out on the perilous ocean

Hunting

Because of the lack of fresh food, sailors are eager to catch and eat whatever fresh meat they can get their hands on. This includes, but is not limited to, whales, seals, penguins, turtles and sea birds.

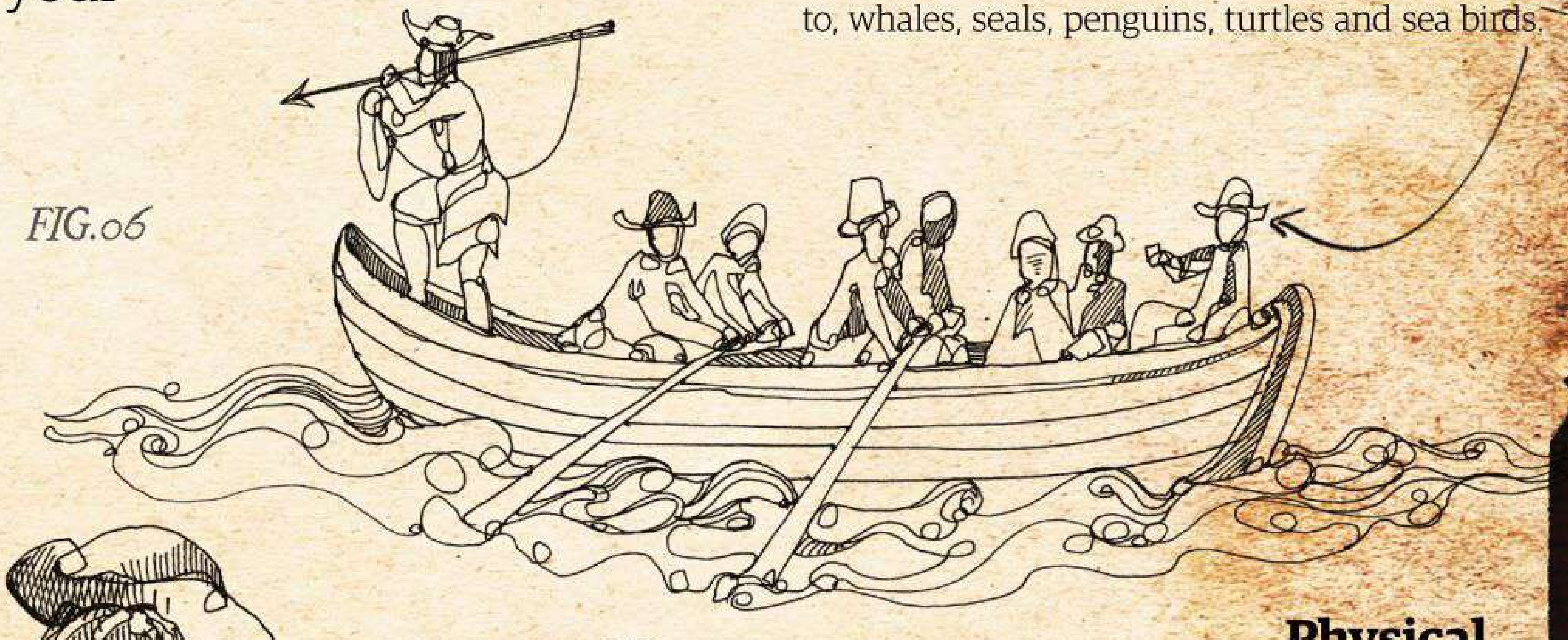


FIG.06

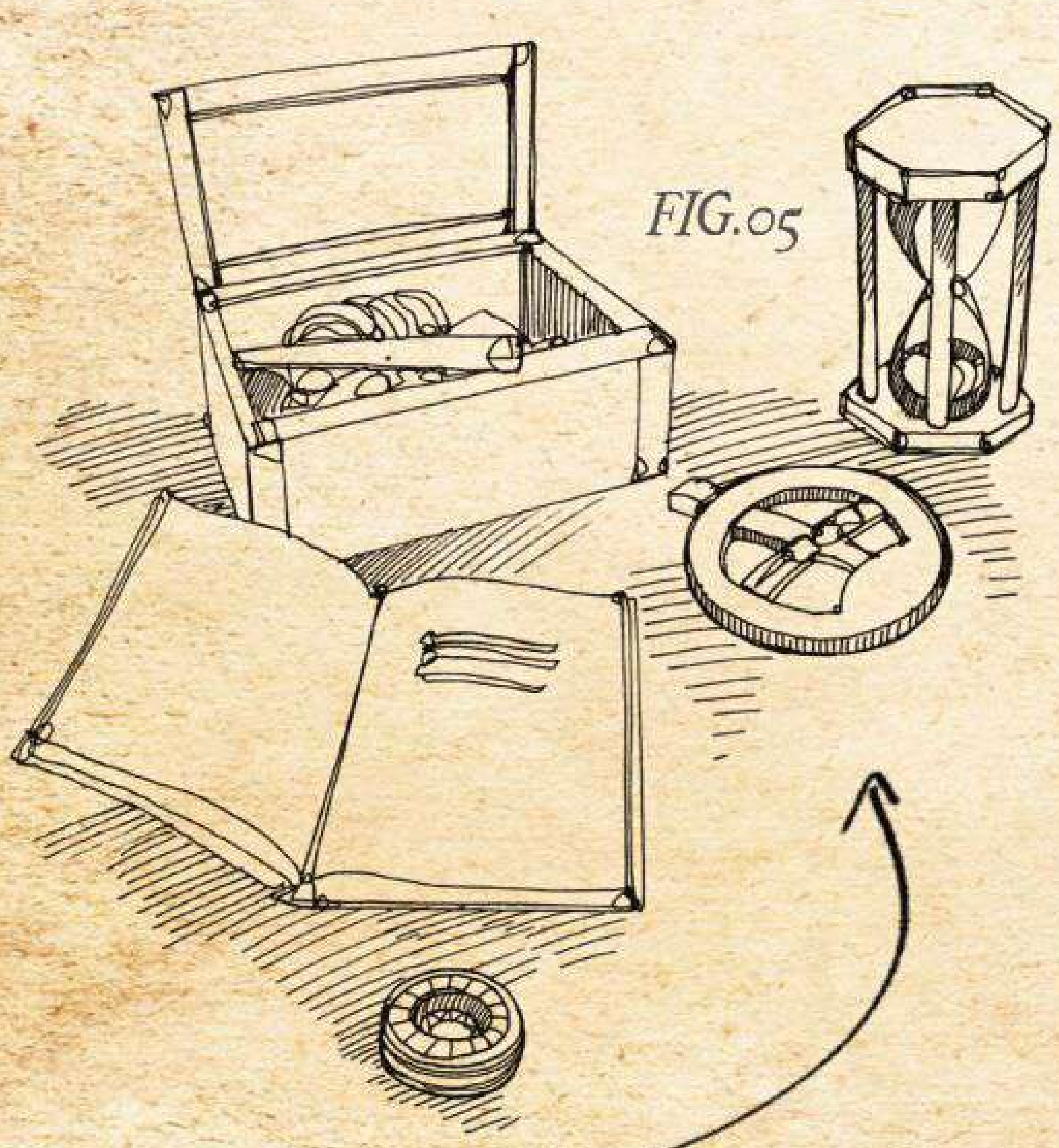


FIG.05

Navigation

English sailors are actually rather behind the times with their navigation skills. Those who make an effort to use equipment that calculates longitude and measure the Sun and stars more often than not return from their voyages.

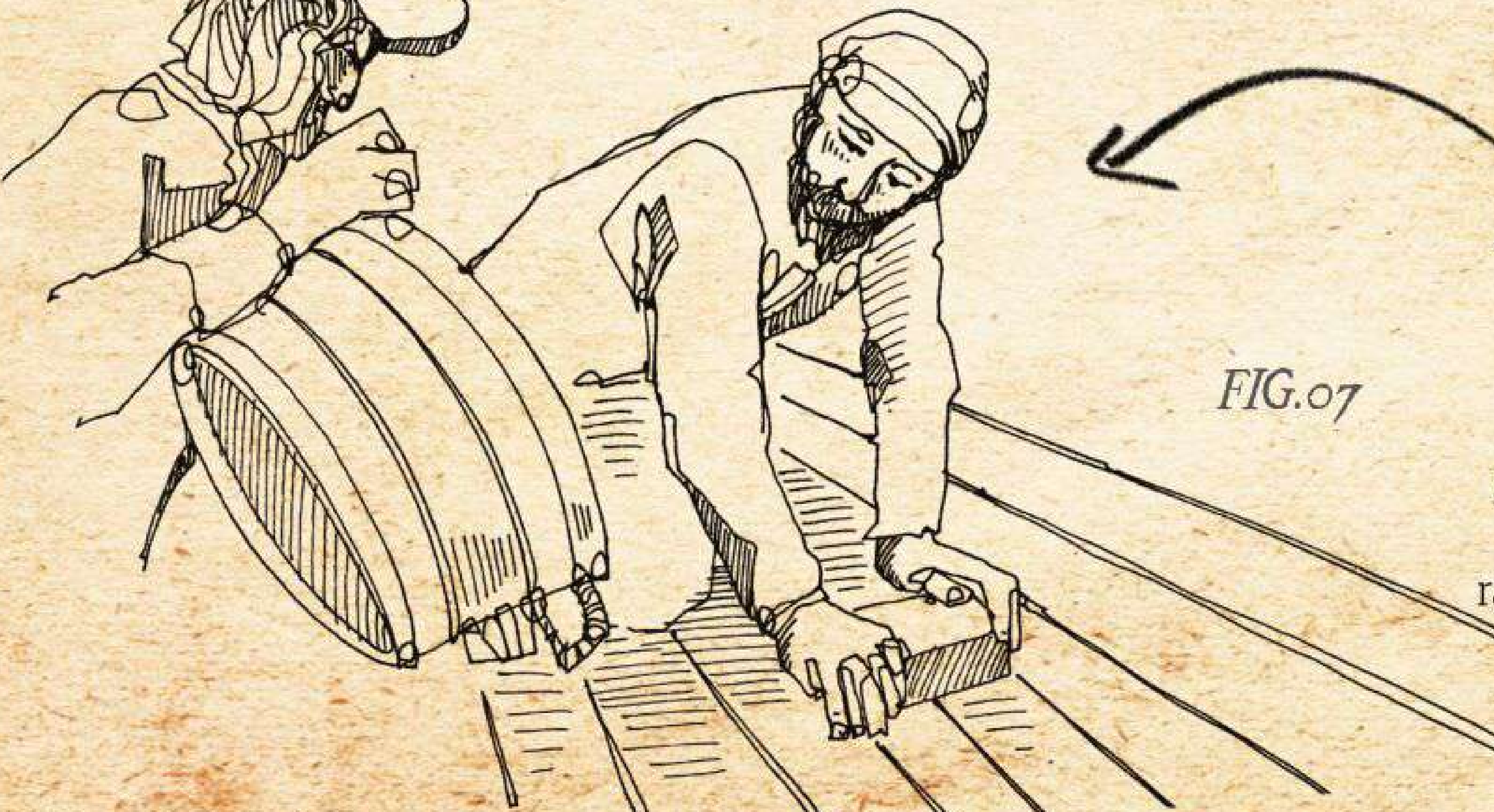
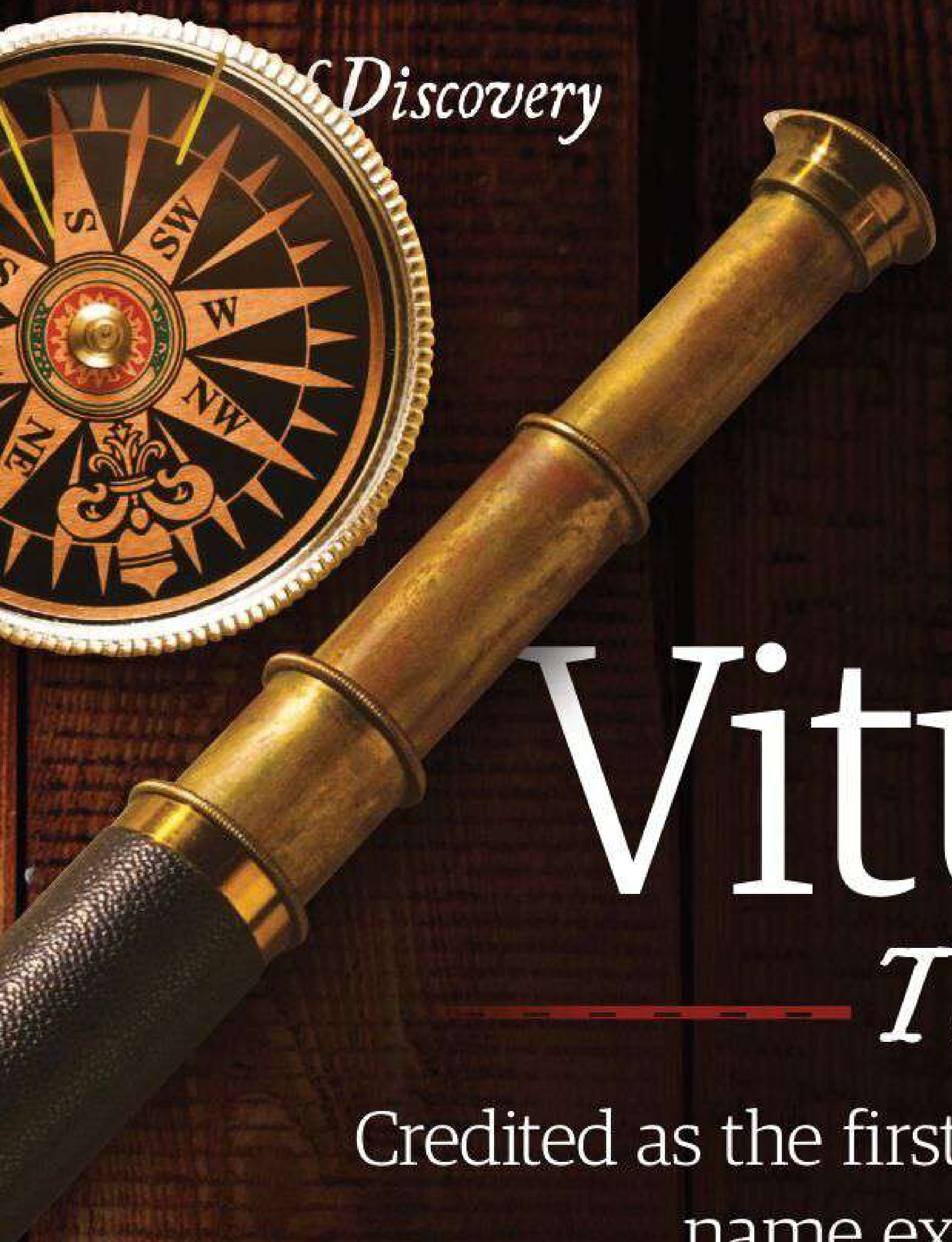


FIG.07

Physical strength

Working on a Tudor ship is not for the weak willed. It involves backbreaking physical jobs day in, day out. Sailors are required to pump the seawater out, scrub the decks, and raise and lower the sails.



Vitus Bering

The Eastern Explorer

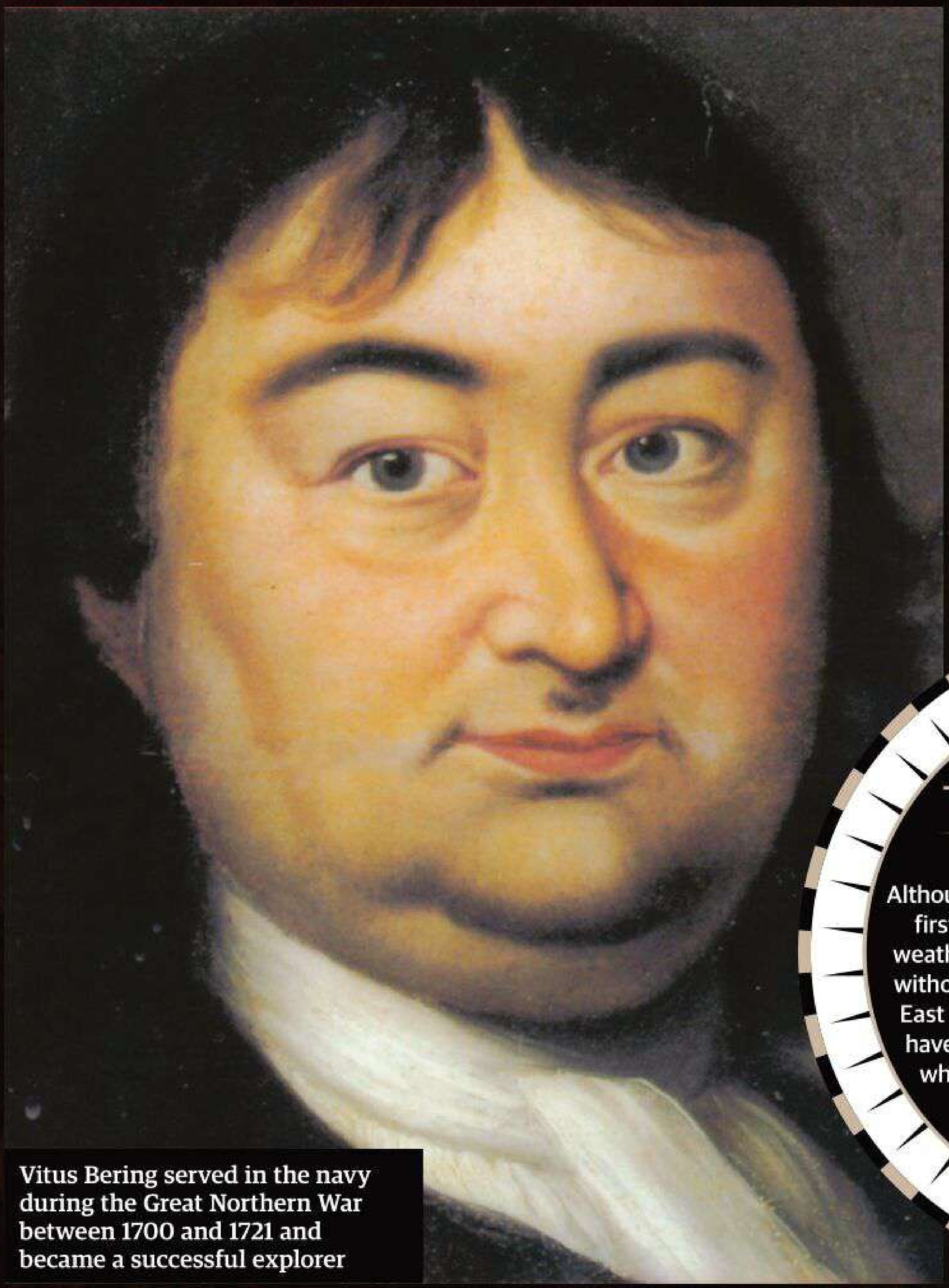
Credited as the first European to discover Alaska, Bering made his name exploring the eastern part of the world

When Vitus Bering set off for what would be a five-year expedition on behalf of the Russian Empire in 1725, the Danish seafarer had hoped to answer a long-standing question: was America and Asia joined at the hip or did a stretch of water separate the two?

The journey to find out had taken him towards and through far northeastern Siberia in the hope of catching sight of the American coast. To have done so would have proven the existence of a North East Passage, opening the possibility of a coveted sea route to China around Siberia. It would also have allowed Russia to advance on its ambitions to expand into North America.

Imagine the disappointment, then, when Bering returned home without the vital proof. Instead, a fog had frustrated Bering's crew as they sailed the strait between Russia and North America, forcing the abandonment of the long voyage north without seeing land. When Bering returned to St Petersburg, he was widely criticised. He may have been entirely correct in assuming the two landmasses were not connected, but the expedition had not delivered any firm answer.

It wasn't long, then, before Bering was proposing a second expedition, continuing an enterprise that had been commissioned by Emperor Peter I the Great. This follow-up set off from St Petersburg in 1733 with a remit far in excess of Bering's core aim. While he had been tasked with planning the expedition, backed by sponsorship from the admiralty college, secondary objectives had been added this time around. What became known as the Russian Great Northern Expedition, or the Second Kamchatka, emerged as the largest scientific venture in the world.



Vitus Bering served in the navy during the Great Northern War between 1700 and 1721 and became a successful explorer

> "The Second Kamchatka emerged as the largest scientific venture in the world"

VITUS BERING

1681-1741

Brief Bio

Vitus Bering was a cartographer and explorer from Denmark who served as an officer in the Russian Navy. He led two Russian expeditions – the First Kamchatka Expedition and the Great Northern Expedition – in the hope of determining whether Asia and North America were connected by land, leading to the European discovery of Alaska.

Defining moment

The first expedition

Although it would be a stretch to claim Bering's first expedition was a failure, the fact bad weather forced him to return to St Petersburg without exploring the coast of Siberia beyond East Cape was rounded on by critics. He may have travelled 6,000 miles and discovered what became known as the Bering Strait in 1727 but the lack of true success spurred him to try again.

March 1730

Huge amounts of money were poured into this expedition and much was expected from it. The hope was that it would chart both the Russian-Siberian and the west coast of North America, find great routes south to Japan and China, build up the port of Okhotsk and expand the Russian Empire. Just as crucially, Bering took a group of scholars with him to study the Siberian land masses and discover more about its history, archaeology, cartography, geography and ethnography. Their resulting work remains of great importance.

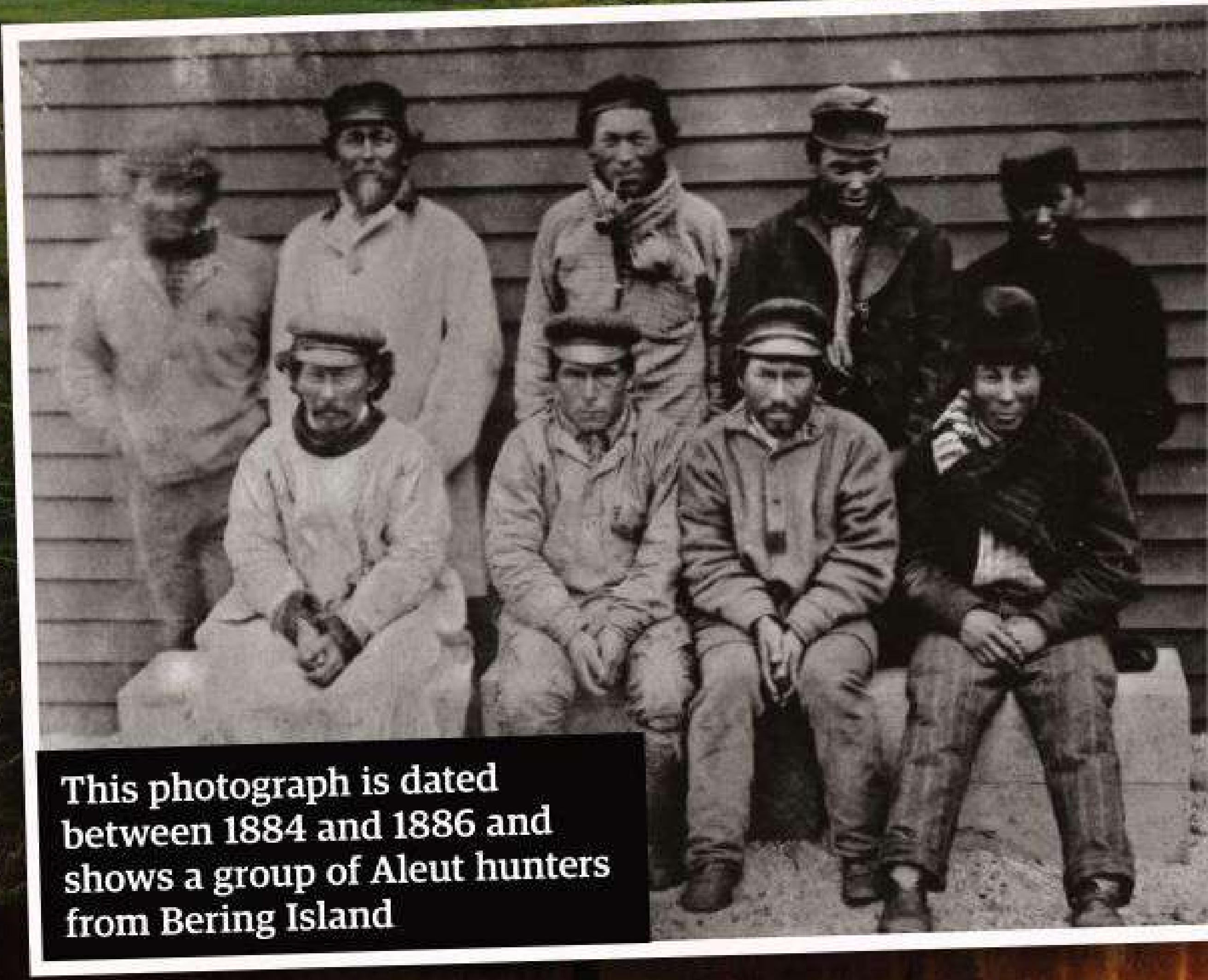
Defining moment

Incredible discoveries

Bering's expedition yielded many rewards. Georg Wilhelm Steller studied the local wildlife during the expedition and came across a (now-extinct) species of sirenian named the Stellar's sea cow. Meanwhile, Bering was able to map the Alaskan coast line, discovering and naming the Mount St Elias volcano in the process. It was a success but one which also killed him.

1741

Bering Island, named after the explorer, is located off the Kamchatka Peninsula in the Bering Sea which is also named after him



This photograph is dated between 1884 and 1886 and shows a group of Aleut hunters from Bering Island

In order to progress, Bering was asked to share his command with the Russian navigator and captain Aleksei Chirikov who effectively became his deputy. Chirikov headed east first, taking 500 men with him. Bering followed some ten days later, taking along his wife, Anna, and their two youngest children. Three key academics – the naturalist and geographer Johann Georg Gmelin, French astronomer Louis De l'Isle de la Croyère and pioneer ethonologist Gerhard Friedrich Müller – left four months later. They were among 19 scientists and artists to travel through Siberia in a bid to report on life and nature on the eastern side of the Ural mountain range.

In all, as many as 10,000 men were said to have embarked on the expedition including soldiers, carpenters, naval officers and boatmen. They were split into groups covering different geographical areas. As the academics studied people and cultures, building up a lot of knowledge about the enormous Siberian land mass, the explorers amassed the information they needed to draw up accurate maps. By continuing to push east, Bering's expedition also allowed the Tsars to take command of a third of the world's land mass.

Aside from exploring the land, Bering began preparing for his voyage at sea in order to go further still. In the developing port of Okhotsk to the far east of Russia, he commissioned the building of two vessels, St Peter and St Paul but construction was slow. While he waited, he took the time to explore a sizeable area of northern Siberia allowing it to be further mapped. His dedication was such that even when Bering's wife and children returned to St Petersburg in 1740, his endeavours continued.

He sent navigator Ivan Yelagin to Avacha Bay in Kamchatka to found a settlement on his behalf which he named Petropalovsk after his ships (the word translates as Peter and Paul). His vessels were then sent there to be readied for the voyage. In June 1741, Bering commanded St Peter, leaving Chirikov to command the other and they sailed towards America, first heading southeast as they sought to find the legendary Joao-da-Gama-Land which was said to have been discovered in 1589 to the north of Japan.

Finding the voyage futile, they turned course and headed back northeast but they became separated when heavy fog descended. Even so, they ploughed on regardless, with Bering's crew mapping the coastline and coming across the volcano Mount Saint Elias – the second highest mountain in North America on the Yukon and Alaska border – on 16 July. On the way back, he discovered Kodiak Island on the south coast of Alaska – the second largest island in the United States of America and he anchored off Kayak Island. Still, he was having a tough time.

Although his expedition had successfully found Alaska and the Aleutian Islands which opened it up for trade and had a long-lasting impact, fierce storms caused him to become shipwrecked with his men in November on an island off the Kamchatka Peninsula. Bering was suffering from scurvy and he was very ill, eventually succumbing to illness on 8 December 1741.

It took the remaining men ten months to build a new boat and return to Petropavlovsk but Bering was never forgotten – he had led an expedition which saw most of the Siberian arctic coast and large areas of North American coastlines mapped. The island where he died and was buried became known as Bering Island and the waters surrounding it Bering Sea. The strait between Russia and the US became known as the Bering Strait while a glacier in Alaska was also named after him. He was indeed a legendary explorer.

Making contact with the native people

When the Russian explorers made contact with Alaska, around 80,000 indigenous people occupied the land. The first Alaskan native groups to directly interact with the Europeans were the Aleuts. So named by the Russians, they inhabited all of the major Aleutian Islands as well as the Shumagin Islands and the Alaska Peninsula and there were said to be as many as 18,000 of them at the time.

Fur traders would sail from the Russian coast to the Aleutian Islands and hunting and trading posts were soon established. The Aleuts, now referred to as the Unangan people, were expected to hunt marine life for the Russians and there was some friction. Not only were they violently coerced to work, it was common for the women and children to be taken hostage, with furs traded in exchange for their lives.

In 1784 there was a record of a revolt against Russian workers on Amchitka island off the west coast but there was also a strong influence with many of the Alaskans becoming Christian thanks to the infiltration of the Russian Orthodox Church. Even so, disease became rife because they had no immunity against many 'new' diseases. It is reported that 80 per cent of the population died between 1741 and 1759 and between 1781 and 1799 of infection diseases carried to them by the Europeans.

How the World Discovered Australia

The Great Land to the South

The promise of a great southern land captivated sailors, pirates, merchants, kings and even popes. Discover how strong winds, astral bodies, religious fervour and economics led us to Australia

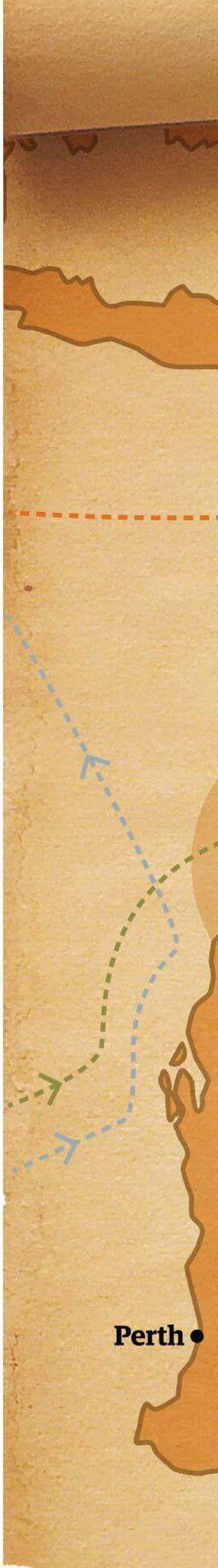
On 20 August 1770, the flag of Great Britain was hoisted over the silver sands to flutter in the breeze. Three volleys were fired by the landing party, and then answered by the Bark Endeavour, moored in the bay.

James Cook and his crew had been at sea for 724 days with Plymouth a distant memory, and it had been 141 days since they had left New Zealand behind. Less than 100-strong, a tiny ship in a vast ocean, they had mapped the coastline, every island and inlet, before tacking west to Van Diemen's Land, then north in search of the eastern coast of Terra Australis Incognita – the unknown land of the south – promised in his sealed orders.

Ostensibly in the Pacific to witness the rare transit of Venus across the sun, their's was a swashbuckling secret mission in the name of discovery, with a royal warrant to claim unsettled lands for the crown, and record alien sights and skies for science. When explorer, astronomer and enlightenment hero Lieutenant James Cook stepped ashore and claimed the great southern land for Britain – naming the whole eastern chunk of this vast continent New South Wales in the process – he wasn't discovering a new world so much as he was meeting an old friend.

The dream of Australia had dominated the European exploration of Asia for 400 years, and had been a myth of Atlantean proportions for much longer. Cook wasn't the first to arrive, flag in hand, and stretched out before him was a road paved with shipwreck, war, spice and piracy, but first, there had to be the idea itself.

15,913 kilometres (9,888 miles) and well over 1,000 years away, Pythagoras set light to Cook's imagination. Around 530 BCE, the Methuselah of mathematics had decamped to Croton in modern Italy to escape the tyranny in his Greek island homeland of Samos. Travelling widely from Egypt to India before founding his school of ideas and gathering his followers, he put his experiences to work, devising the theorem that bears his name. Pythagoras was also credited with the notion



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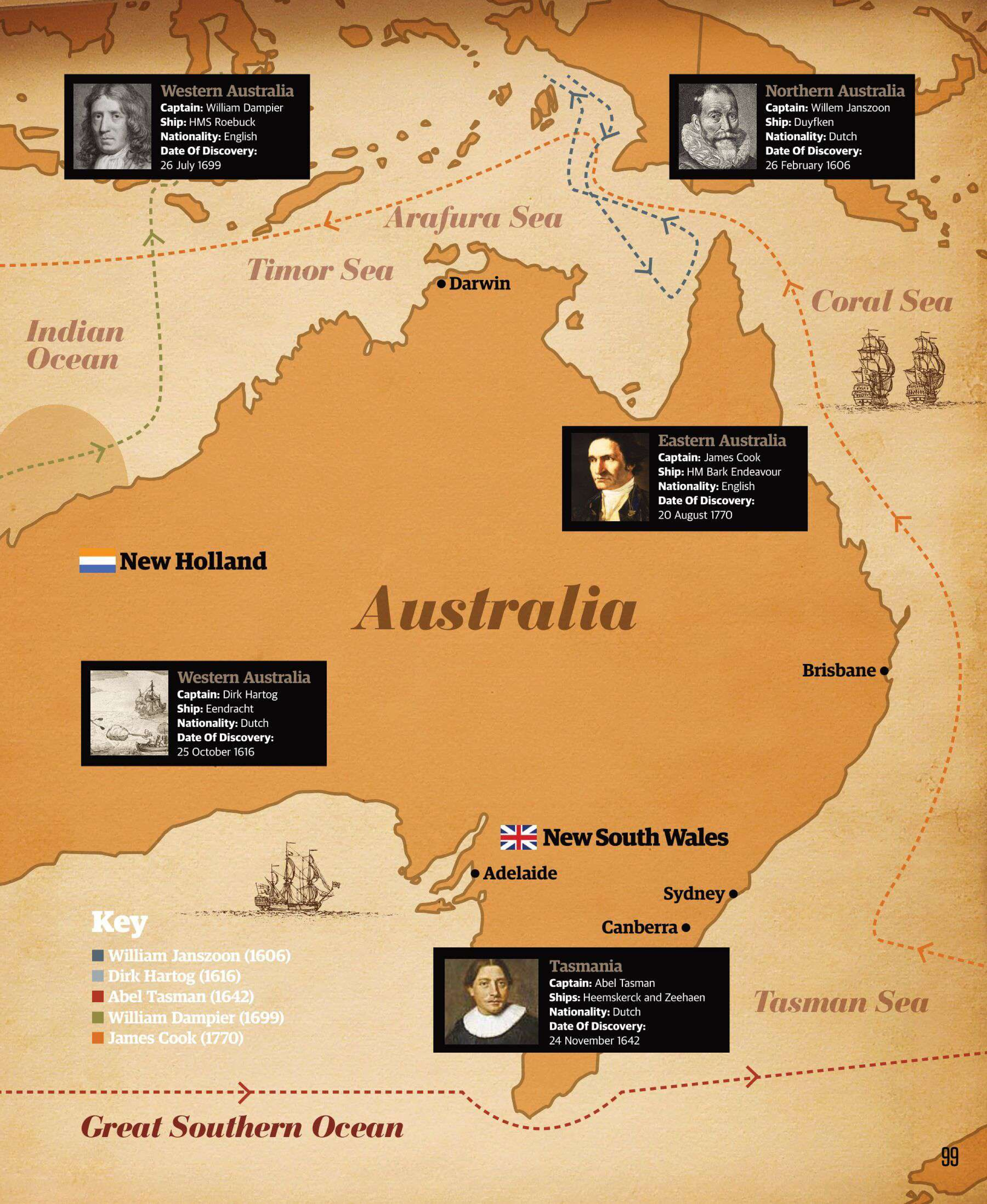

Arafura Sea
Timor Sea
Darwin
Coral Sea
Indian Ocean
New Holland
Australia
Brisbane
New South Wales
Adelaide
Sydney
Canberra
Tasman Sea
Great Southern Ocean
Key
🟦 William Janszoon (1606)
⬜ Dirk Hartog (1616)
🟥 Abel Tasman (1642)
🟩 William Dampier (1699)
🟧 James Cook (1770)

Western Australia

Captain: William Dampier
Ship: HMS Roebuck
Nationality: English
Date Of Discovery:
26 July 1699

Northern Australia

Captain: Willem Janszoon
Ship: Duyfken
Nationality: Dutch
Date Of Discovery:
26 February 1606

Eastern Australia

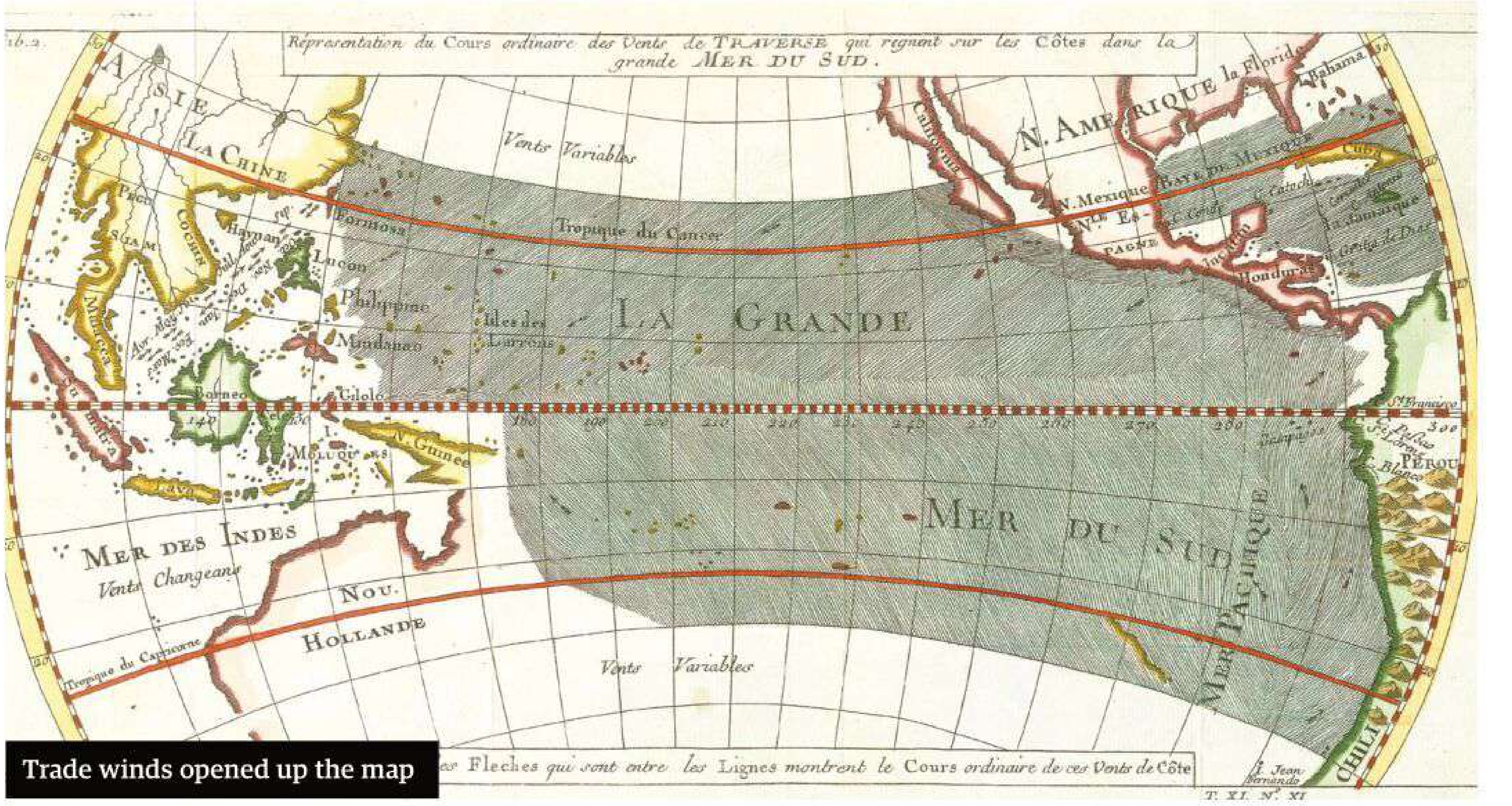
Captain: James Cook
Ship: HM Bark Endeavour
Nationality: English
Date Of Discovery:
20 August 1770

Western Australia

Captain: Dirk Hartog
Ship: Eendracht
Nationality: Dutch
Date Of Discovery:
25 October 1616

Tasmania

Captain: Abel Tasman
Ships: Heemskerck and Zeehaen
Nationality: Dutch
Date Of Discovery:
24 November 1642



Trade winds opened up the map

> "The dream of Australia dominated European exploration of Asia for 400 years, and had been a myth of Atlantean proportions much longer"

that our world was a sphere, and so there had to be a vast landmass to the south to balance this orb. Two centuries later, Aristotle advanced this theory based on the circular shadow of the Earth during a lunar eclipse and the changing places of constellations the further south you sailed. In the wake of Aristotle's studies of the night sky, the Roman geographer Pomponius Mela (1st century) produced maps dividing the world into northern and southern zones, and later the Greco-Roman astrologer, astronomer, geographer and all-round busy thinker Claudius Ptolemy (90–168 CE) compiled all the knowledge that he could of the world's regions into his immense *Geographia*, adding that the route to the great southern land was no doubt impassible due to "monstrosities."

The idea of this new expanse – Terra Australis – took root in the foundation of Renaissance geography and cartography, until every map came with a vaguely defined great southern land. Just as Cook's 1768 mission – a fact-finding expedition for the Royal Society of London – came with its sealed orders to increase the reach of the British Empire, it was politics and economics that set his spiritual predecessors off on their voyages of discovery.

In 1368, the mighty Mongol Empire, that stretched from Eastern Europe to the Sea of Japan, collapsed, ruling out the overland journey to the riches of China and India. The surprisingly cordial relationship between the Khan and the Pope was replaced by tensions between Christian Europe and the rising Islamic Ottoman Empire, which closed the overland routes to the east. Their hand forced by demand for spices, silk, tea and porcelain, the mercantile nations – the Portuguese and Spanish at first, and then the Dutch, French and English – began to look for sea routes into the Indian Ocean and beyond.

While the European superpowers began to look upon their maps and globes anew, the powerful Tamil merchant dynasties of Sri Lanka established their own maritime trade empire that stretched its fingers across South East Asia between the 9th and 14th centuries. Their holds stuffed with the luxuries of India, and the traditional Tamil proverb "cross the oceans and acquire gold" on their lips, they made their presence felt through art and architecture in Thailand, Java, Malaysia, Vietnam and Cambodia. By the 18th century – though their once great empire had declined, replaced by colonial Portuguese, and then Dutch and British – Tamils were trading with the European settlers in New Zealand and Australia. Yet there's evidence to suggest that they'd been there before: a 14th century ship's bell, beautifully inscribed in Tamil, found in 1836 being used as a Māori cooking pot.

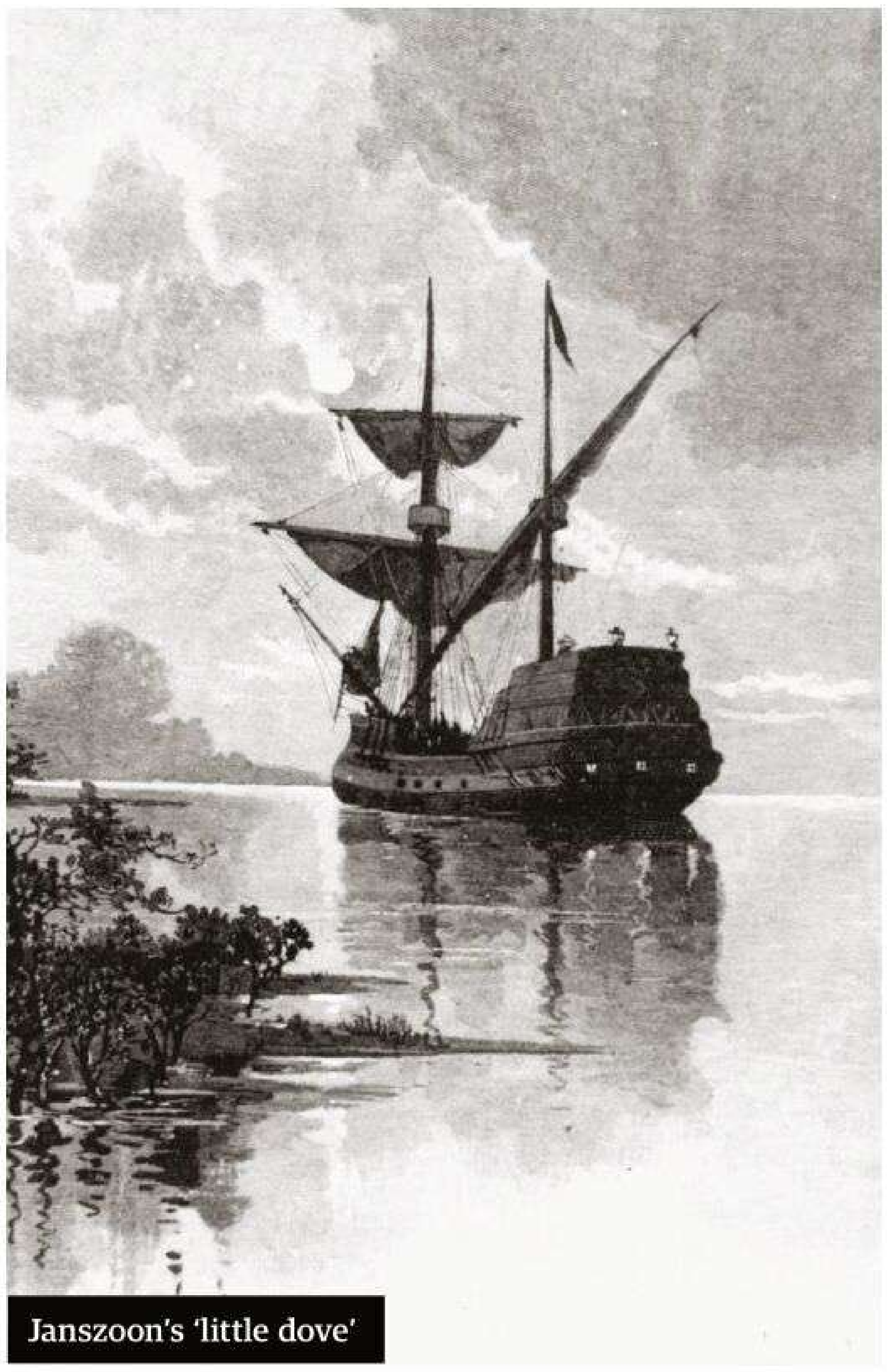
Now locked in a mercantile Cold War, following a belligerent race for territory and trade across the gradually opening globe, the Portuguese and Spanish reached a frosty impasse with 1494's Treaty of Tordesillas, dividing North and South America between them, and then 1529's Treaty of Zaragoza which divided Asia.

The Portuguese crown had rolled across East Africa, India and into Malaysia, with the city of Malacca and the nutmeg and clove-rich Spice Islands of the Banda Sea at the centre of their interests. They even set up a trading post on the island of Timor in 1590, only 720 kilometres (448 miles) from what is now Darwin in the Northern Territories. Claiming much of Asia as their own and setting the rival Spanish up for a future toehold in the spice-free Philippines, and precious little else, the Zaragoza line neatly bisected New Guinea, and though they may not have known it, also that fabled Terra Australis Incognita.

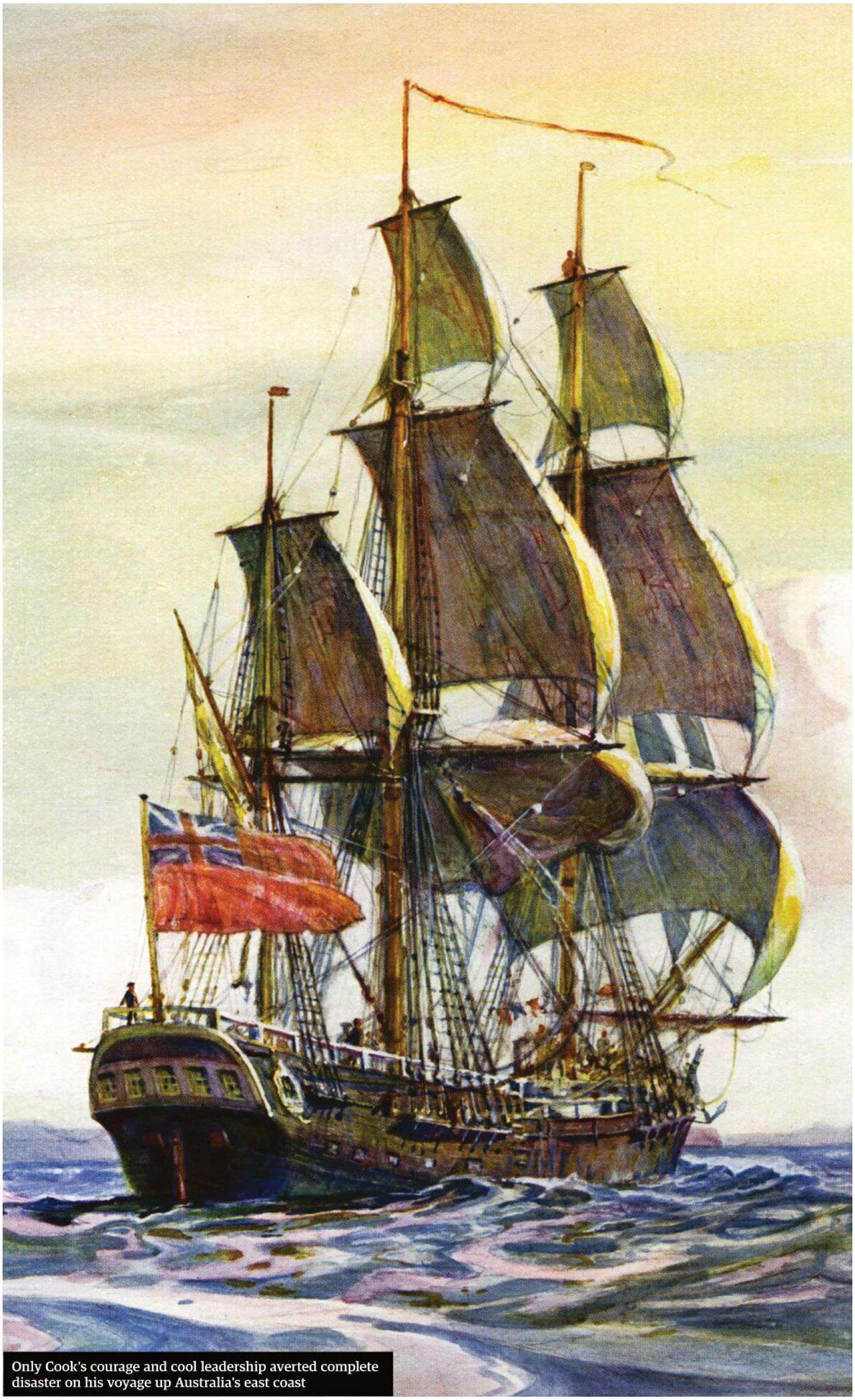
With the support of Pope Clement VIII and King Phillip III, Pedro Fernandez de Queirós set off from Peru in 1603 with three ships to find and claim Terra Australis for Spain. Leaving navigation "to the Will of God" and landing on Vanuatu, just west of Fiji – mistaking it for his prize – he dubbed it La Austrialia del Espíritu Santo, the Southern Land of the Holy Spirit, before attempting to found a colony called Nova Jerusalem (and a holy order, the Knights of the Holy Ghost, to protect it). Nova Jerusalem collapsed ignominiously through the hostility of the Ni-Vanuatu and his own crew.

Ironically, it was actually de Queirós's second-in-command, Luís Vaz de Torres, who came the closest to realising his dream. Separated from de Queirós, de Torres led the two remaining ships to Manila. When winds forced him south of New Guinea instead of north, he and his crew became the first recorded seamen to navigate the strait that now bears his name, dividing New Guinea in the north from Australia in the south. Though he may not have locked eyes on the northern shore of the great southern land, he came amazingly close.

While de Queirós's divine mission scattered, his masters fared little better. In 1578, the status quo was rocked when King Sebastian I of Portugal died without heir, prompting a Spanish invasion in 1580 that saw King Phillip III's father unite both thrones. Spain gained Portugal's colonial possessions, and those increasingly vulnerable and far-flung Portuguese colonies gained Spain's multitude of enemies. Over the next two decades,



Janszoon's 'little dove'



Only Cook's courage and cool leadership averted complete disaster on his voyage up Australia's east coast

Australia's discovery of the world

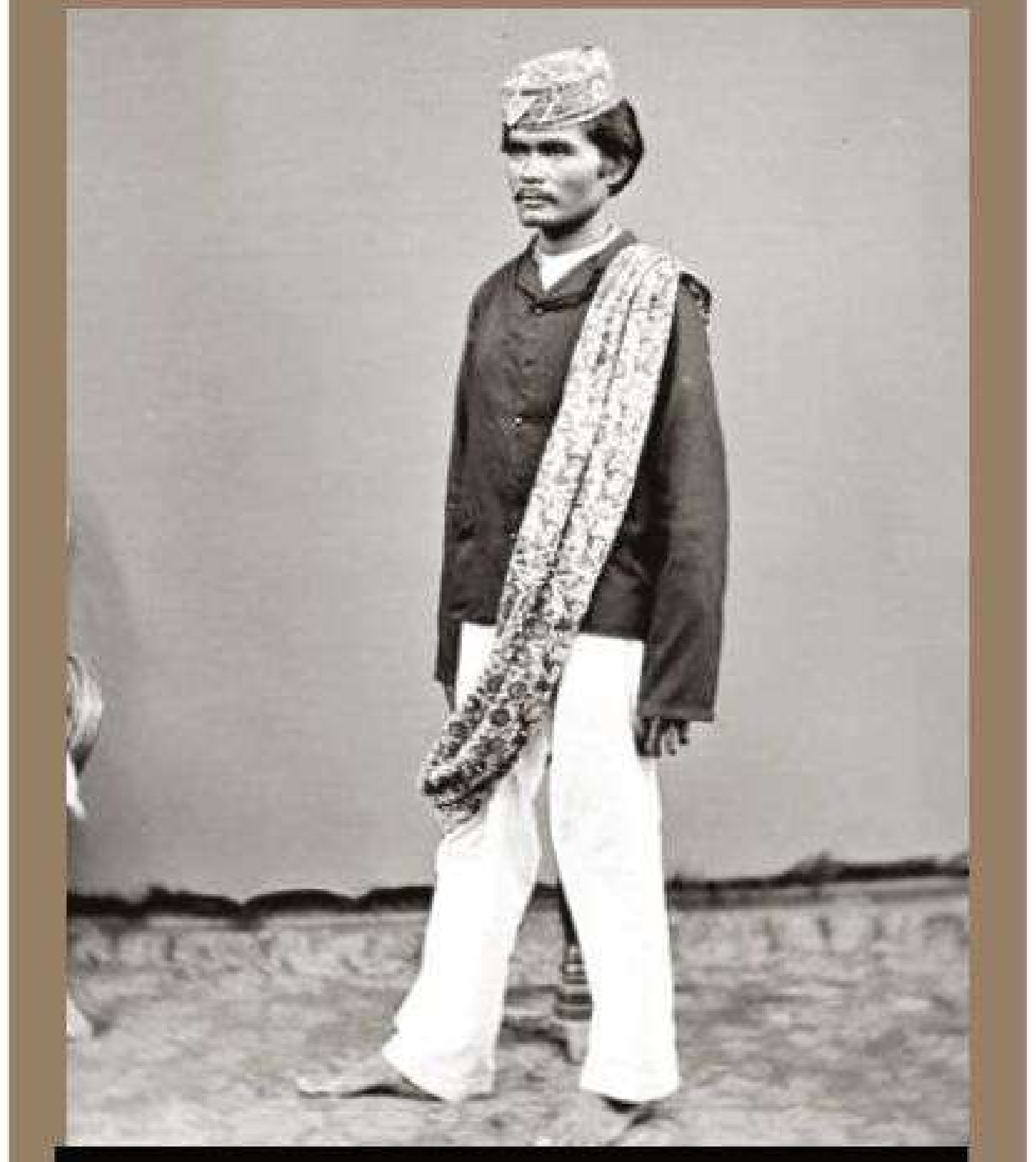
While European explorers tacked ever closer, Australia's nearer neighbours had already reached out for the great southern land, and it had reached back.

Between the 16th and 18th centuries (possibly as early as the 12th), Makassan trepangers – sailors from Sulawesi (now part of Indonesia) who harvested sea cucumbers for a Chinese market – traded fishing rights with indigenous Australians for cloth, tobacco, metal axes, knives, rice and gin, and the Aboriginals traded turtle shells, pearls and cypress pine in return. Some Aboriginals willingly joined Makassan crews to collect trepang.

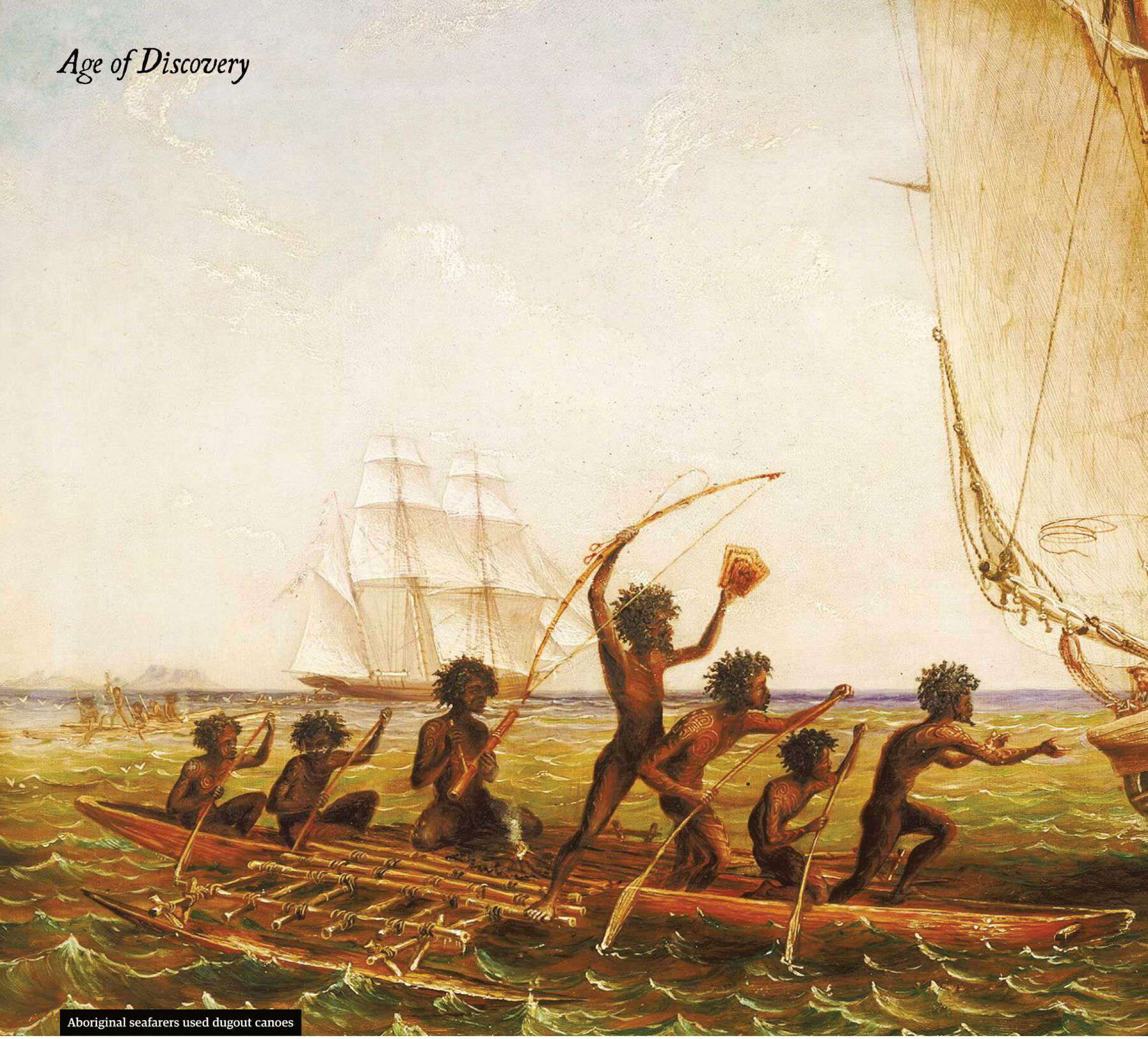
The Makassan legacy ranged from smallpox to new words. With somewhere between 350 and 750 languages or dialects spoken by the same number of Aboriginal tribes, Makassar became the coastal lingua franca. Many words closely related to Javanese and Indonesian are still in use by Aboriginals today. The Makassans may have left the trappings of their faith, too, with some historians arguing that elements of Islam (adopted by Sulawesi in the 15th century) made their way into Aboriginal ceremonies.

Contact with the Makassans span the Yolgnu's whole world on its axis, as they became focused on the sea, crafting resilient dugout canoes in Makassan style that allowed them as far out as the Torres Strait Islands and New Guinea. The Torres Strait Islanders themselves crafted outriggers and ocean-going dugouts up to 20 metres long for trade with both the mainland and New Guinea – a practice that continues even now, protected by the Torres Strait Treaty from all customs and border controls.

In this, at least, the way of life shared uninterrupted by the Australian Aboriginals and Torres Strait Islanders for over 40,000 years has gone unchanged.



The Makassar people were early traders with indigenous Australians



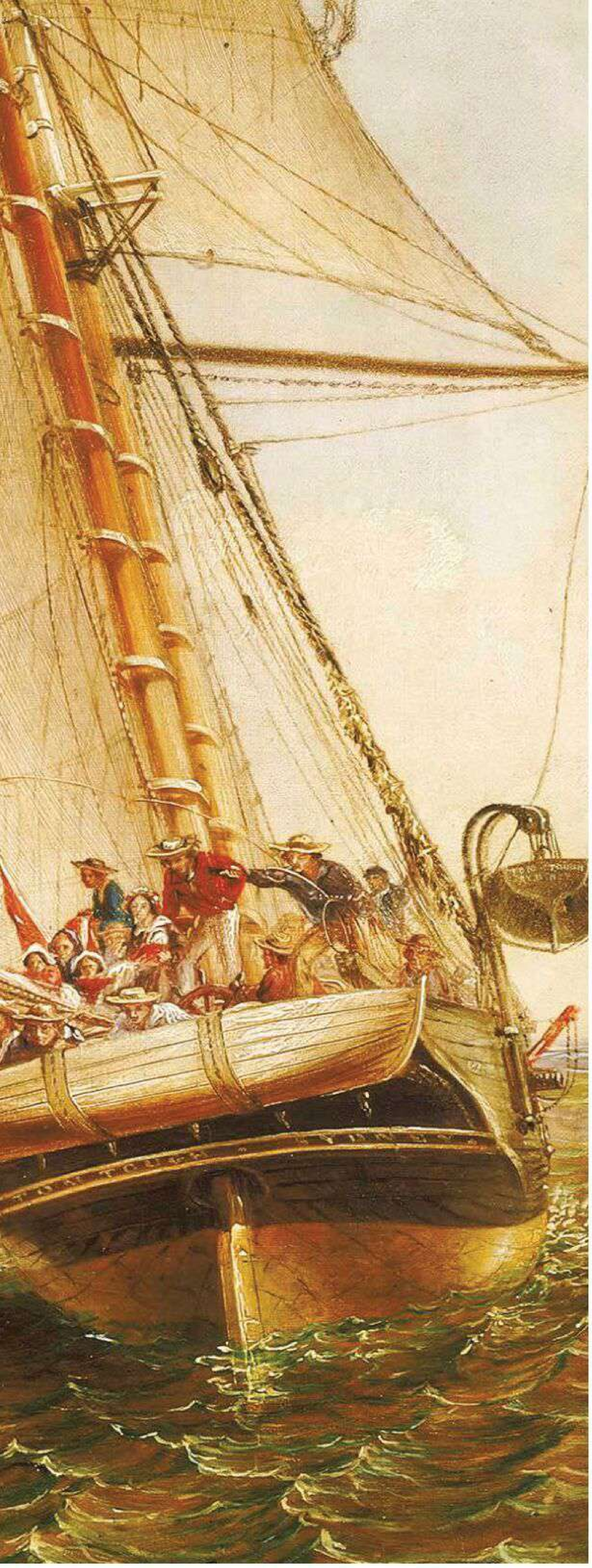
Aboriginal seafarers used dugout canoes

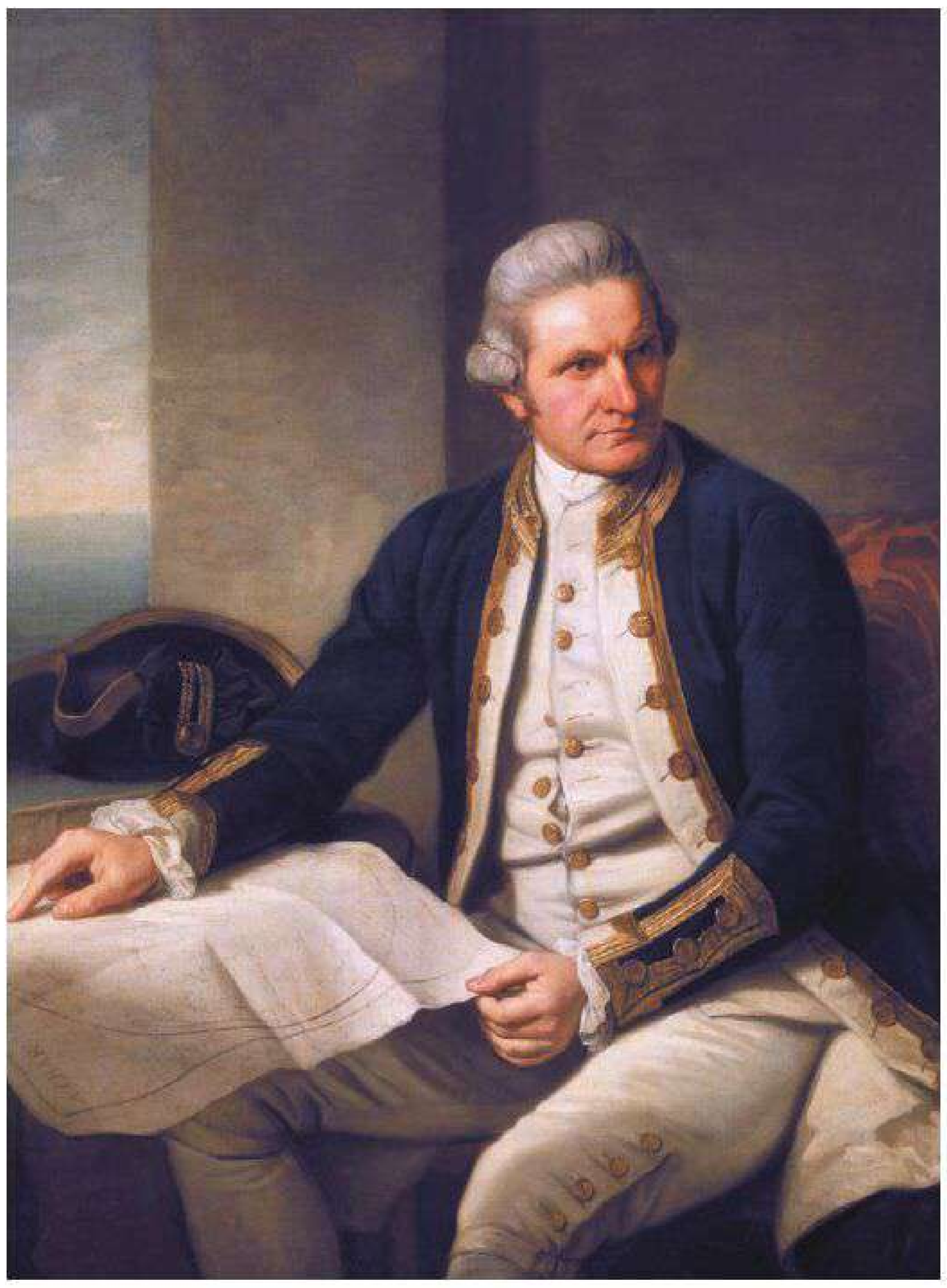
England, France and the newly independent Dutch Republic snapped at the Iberian Union's heels in North America, South America, India, Africa and South East Asia – tearing off chunks of land, piece by bloody piece.

In 1605, the Duyfken ('little dove'), its eight cannons blackened by Spice Islands skirmishes with the Portuguese, sailed from Java, newly fallen under Dutch influence, to explore the coast of New Guinea on behalf of the Dutch East India Company (VOC). Captained by Willem Janszoon, he became the first recorded European to set foot on Australia in 1606, thinking it was the continuing western coastline of New Guinea (missing the Torres Strait altogether – and it would take Cook, over a century later, to conclusively prove that Australia was a separate landmass). Finding it swampy and inhospitable, the crew of the gently named Duyfken proved themselves anything but, as amicable early encounters with the Aboriginal Australians turned sour when the Dutch abducted some of their women, prompting a cycle of attack and reprisal that forced them back to sea.

Janszoon was followed in 1616 by Dirk Hartog on the Eendracht's maiden voyage. Becoming separated from a VOC fleet crossing the Cape of Good Hope, he took advantage of the 'Roaring Forties' – powerful westerly winds that could cut a journey shorter by months – and whether by accident or design, he shot across the Indian Ocean far more southerly than was usually safe. The Eendracht reached Western Australia and left a flattened pewter dinner plate as its testimony. Thanks largely to VOC's enthusiasm for speed over lives – the company insisted its captains take advantage of the Roaring Forties, regardless of the danger – the Dutch caught sight of Australia many times over the next few decades, gradually shading in more and more of their maps, with many more of them left smashed against the rocks. The oldest of these wrecks was the Tryall, sunk in 1622 en route to Java from Plymouth and captained by John Brooke. The Tryall represented an achievement by which Cook could scarcely be inspired – the first Englishman to clap eyes on the great southern land was also the first European to sink within her treacherous currents.

While recklessness had catapulted Europeans onto antipodean shores, the meticulous Abel Tasman was a different breed. He had the ship's carpenter swim ashore to plant the flag, rather





than risk a ship on unknown rocks, to claim Van Diemen's Land in 1642 (now known as Tasmania) in honour of Anthony van Diemen, the governor-general of the Dutch East Indies.

Van Diemen had earned that privilege – under his stewardship, the Dutch East Indies became a centre for frantic map-making and territorial expansion, and Tasman was entirely on message with his employer's way of doing things. With so much intricate detail captured through drawings, diaries and maps on his voyage to Tasmania, and then across the Tasman Sea to become the first European to reach New Zealand, Cook used his writings over a century later as a reference, landing in Poverty Bay to claim it for Britain.

Tasman returned to Australia once more in 1644, mapping the northern shores and choosing the name that would supplant Terra Australis – New Holland. It would survive both Cook and the colony of New South Wales, and only 180 years after Tasman first uttered the name 'New Holland' would it be officially replaced by 'Australia'.

If Abel Tasman was the example that James Cook followed, then William Dampier was the (somewhat dubious) legend that Cook ultimately aspired to.

A British buccaneer from humble beginnings, he had circumnavigated the globe a record-breaking three times, writing the bestselling *A New Voyage Round The World* in 1697 and rescuing the man who would become Daniel Defoe's Robinson Crusoe. His adventures impressed the British Admiralty so much that in 1699 – 29 years before Cook's birth – Dampier was given the helm of the HMS Roebuck, and a commission to explore New Holland and uncover the eastern coast that would later fall to Cook. Dampier collected an unprecedented catalogue of Australian plants and wildlife before the rotting Roebuck began to take on water. After some slipshod repairs allowed them to return home – the east coast mission abandoned – the unlikely naturalist was later marooned on Ascension Island.

> "The idea of this new expanse took root in the foundation of Renaissance geography and cartography"

Court-martialled for losing the vessel in his charge and deemed "unfit to command any of HM's ships, Dampier promptly returned to the life of a sanctioned Jack Sparrow, but not before releasing *A Voyage To New Holland* in 1699, rich with detail of flora, fauna, rocks and even prevailing winds.

Though Dampier had failed in his most strategically important goal – and lost his ship doing so – his voyage pre-empted a paradigm shift, not just in British thinking but in French too. However, this took nearly another century to materialise, and it would again be politics and profits that saw navigators, botanists, explorer and East Indiamen dispatched with flags for planting. The colonial horse-trading and nation-swapping that closed the Seven Years' War in 1763 saw Spain, France and Britain ease into a stand-off far messier and more convoluted than Portugal and Spain in the 15th and 16th centuries, and once more the booming empires had nowhere left to expand but into the unknown.

Naval officers – who, like Cook, had proven their worth in the far-flung theatres of the last war – were dispatched to the Pacific with increasing regularity by a conflict-scale navy with a peacetime surplus of ships, men, money and experience. In quick succession, the Admiralty sent Commodore John Byron in 1765 and then Captain Samuel Wallis in 1766 on the HMS Dolphin, and Captain Phillip Carteret on the HMS Swallow in 1766, and then Cook himself in 1769 – all spreading the red, white and blue across a swathe of Pacific islands, the promise of Terra Australis never far from their minds.

As James Cook and his predecessors raced south just as Tasman and Torres had done before them, their French counterparts at their heels, the map of Australia would continue to be shaded in inch by inch. Whether their sails were buffeted by economic, political or imperial forces as much as by the Roaring Forties, their achievements remain a triumph of reason and discovery. When Cook finally felt Australian sands crunch beneath his feet, it's true that he was building on older expeditions – the writings of Tasman, Dampier and, more recently, Wallis at his hand – as well as the ideas at its heart stretching back to Ancient Greece, but his discoveries would become the foundation for a colony, and eventually a nation.

It would be many more years before European settlers knew for a fact that the land Cook had claimed as New South Wales was connected to New Holland, and *wasn't* connected to Van Diemen's Land, just as it took Cook to prove that these scattered chunks of a much grander country weren't connected to New Zealand or New Guinea (thanks in part to the Spanish keeping Torres' voyage to themselves).

Their vessels cutting across unknown oceans and into alien horizons, these men – this cast of thinkers, seafarers, pirates and traders from across centuries – closed a chapter in Australia's long history, and for better and for worse a new one was about to begin.

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Voyages to New Zealand

Land of the Long White Cloud

A land formed 90 million years ago that was untouched by humans for all but the last 740. New Zealand surprised every explorer

New Zealand is so remote from the rest of civilisation that it was almost the last significant landmass to be colonised. The earliest settlers were Polynesian explorers in the 13th century. They came from the islands around Tahiti, 4000km away, sailing large 60-person canoes, possibly in several waves of exploration. They brought with them the Polynesian rat, or kiore, which they bred for food. And since the kiore doesn't swim well, we know it can't have reached New Zealand without hitching a ride aboard human ships. Archaeological excavations of early human settlements have found seed husks showing distinctive kiore gnaw marks, and radiocarbon dating of these husks shows that there were no humans living in New Zealand before 1280. These early colonists became the Maori people, with a similar language to other Polynesians, but with their own distinct culture. In the 19th century it was popular in Europe to suggest that the Maori may have displaced a much older civilisation called the Moriori. These more primitive people were supposed to have died out in the face of competition from the Maori, apart from a tiny remnant that survived on the Chatham islands to the east. We now know that it was actually the other way around. The Moriori were originally Maori explorers from New Zealand that colonised the Chatham islands around 1500. They became culturally isolated from the New Zealand Maori, and didn't start calling themselves Moriori until the 1830s when they met Maori travelling on European sailing ships.

Abel Tasman originally named New Zealand Staten Landt, believing it was part of Staten Island off the coast of Argentina

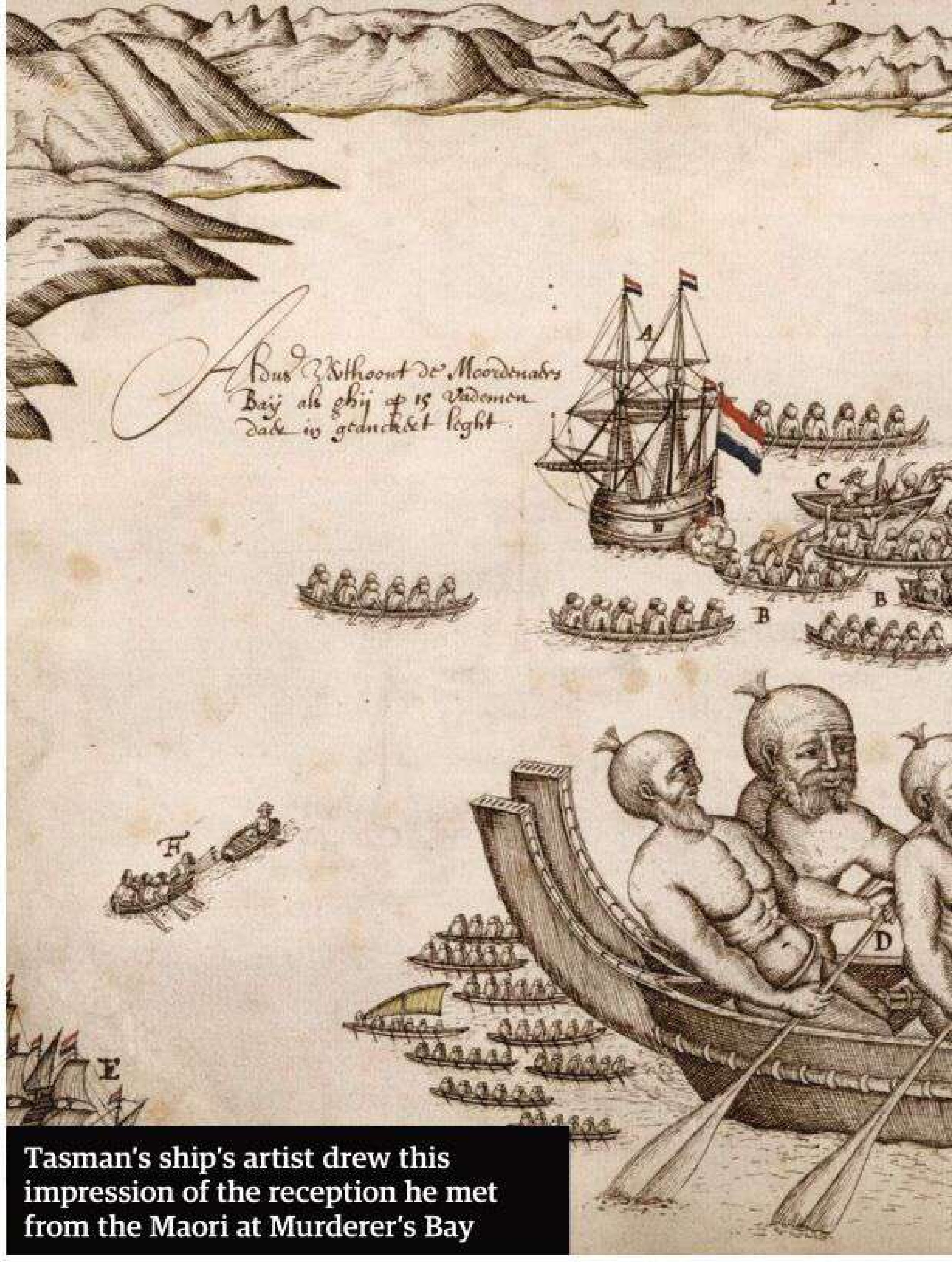
By the 1560s, Spanish and Portuguese sailing ships were regularly sailing back and forth across the Pacific Ocean but European maps south of Indonesia were still largely blank. It wasn't until 1642 that the Dutch merchant and seafarer Abel Tasman made the first recorded discovery of New Zealand. Tasman had been sent by the Dutch East India Company to chart a totally unknown place called Beach, which was believed to be on the northern coast of the long-sought continent of Terra Australis (southern land). He didn't find this place, because it didn't exist, at least not in the location suggested by the maps of the day – these dangled promises of a vast unexplored continent at the edge of the south Pacific. The trouble was that all of these maps

James Cook comes ashore at Queen Charlotte Sound in 1777, with HMS Resolution and Discovery anchored in the bay were based on a blind acceptance of Marco Polo's account of his travels 300 years earlier, which we now know contains several mistakes. But, like almost every undiscovered land before it, Terra Australis was supposed be full of gold, and the Dutch East India Company was keen to find it first.

For Tasman, this wasn't as simple as just sailing due south until he hit land. Tasman set out from the Dutch port of Batavia (now Jakarta, Indonesia) but in order to take advantage of the prevailing winds, he sailed east-southeast almost the whole way across the Indian Ocean to Mauritius, then doubled back and headed west-southwest. On 24 November 1642 he discovered the west coast of Tasmania, after travelling 14,000km in order to make just 4000km progress southward. Tasmania is now named after Abel Tasman, but he originally called it Van Diemen's Land, in honour of Antonie van Diemen, who was one of the sponsors of his voyage. After sailing round the southern coast, Tasman tried to head north, but bad weather forced him east instead. This meant he became the first European to discover New Zealand when he reached the northwest coast of South Island a few days later. Tasman sailed north around the coast for five days and then sent two ship's boats to gather drinking water. Before they reached the shore, they were attacked by Maori in a large canoe, and four of his men were killed. As Tasman tried to sail away they were attacked by another eleven canoes. He fired on them using a cannon loaded with a canister shot and may have killed one Maori. Tasman named that bay Murderer's Bay (since renamed to Golden Bay) and never returned to New Zealand. When he got back to Batavia on 15 June 1643, the Dutch East India Company was disappointed that he hadn't explored the area more thoroughly. He was the first European to have sailed south of 27 degrees latitude in the Pacific. But neither Tasman nor his crew had set foot on New Zealand's soil, and his contribution to its geography was just a ragged line on a map, with nothing to indicate whether it belonged to an island or some larger continent. The Dutch saw nothing there to justify another expedition to explore it further and it would be 125 years before the next ship reached New Zealand's shores.

The captain of that ship was James Cook, a 39-year-old Royal Naval officer, newly promoted to lieutenant so that he had enough rank to command his ship, the Endeavour. His primary mission was to observe the transit of Venus across the Sun, which would be visible from Tahiti on 13 April 1769. Once this scientific measurement was complete, he opened a second set of sealed orders that gave him a new mission to sail down as far as 40 degrees south, in search of Terra Australis. This mission was secret because Britain hoped to claim the golden continent for herself and didn't want to attract the attention of other nations until her flag was firmly planted on this new country. Cook's instructions stated that if he didn't hit land by the time he reached 40 degrees south, he should turn west and sail along a corridor between 35 and 40 degrees south, until he hit the coastline previously discovered by Abel Tasman. Cook himself doubted that an undiscovered southern continent was there to be found, but he was keen to be able to prove this conclusively to his superiors, so he dutifully followed his instructions. On 6 October 1769 Nicholas Young, the surgeon's boy, sighted the northwest coast of New Zealand from the crow's nest of the ship. The Endeavour anchored in Poverty Bay, and Cook named the headland Young Nick's Head, in honour of the boy.

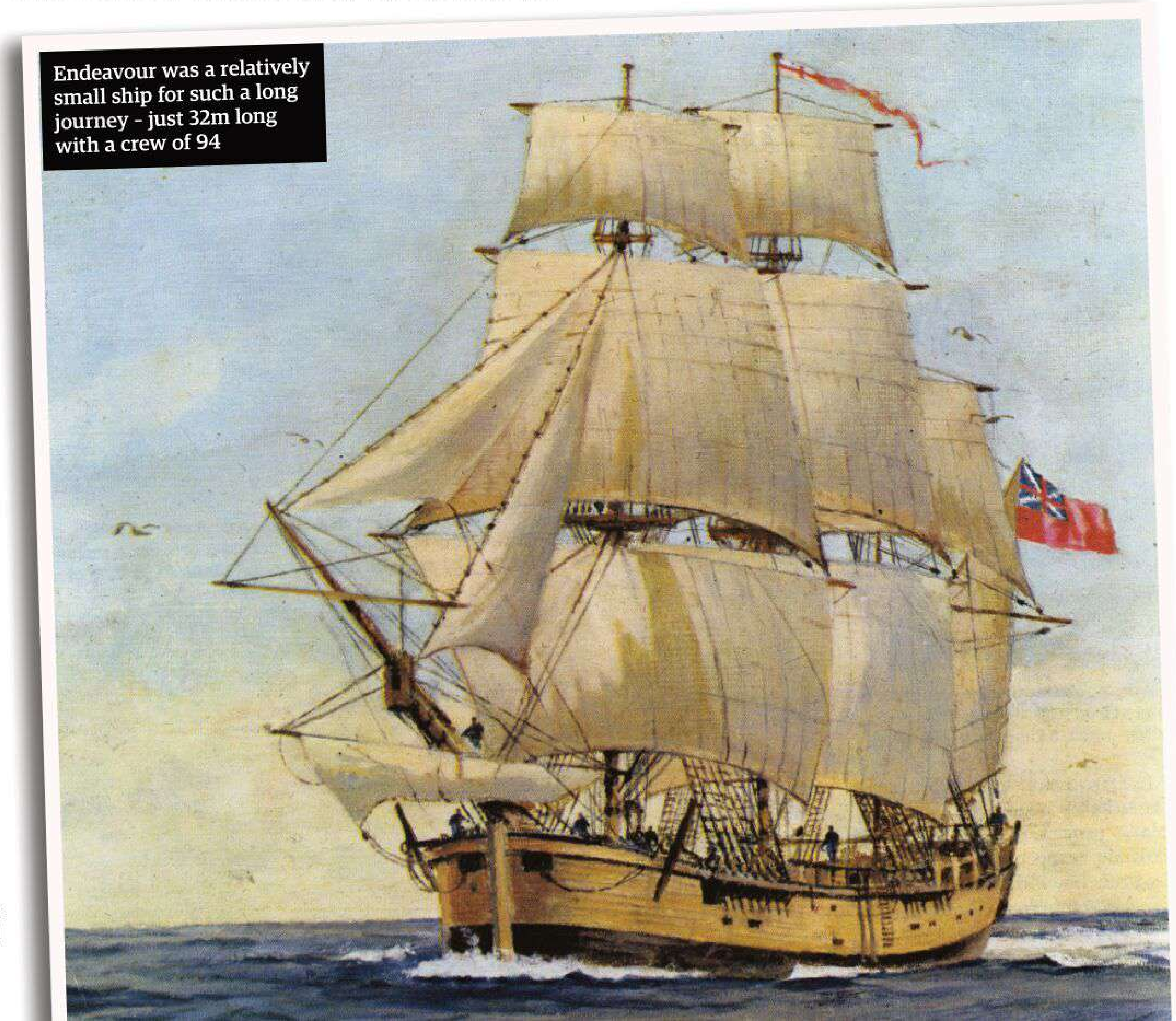
> James Cook named some of New Zealand's coastal landmarks. Mt Cook and Cook Strait are named after him



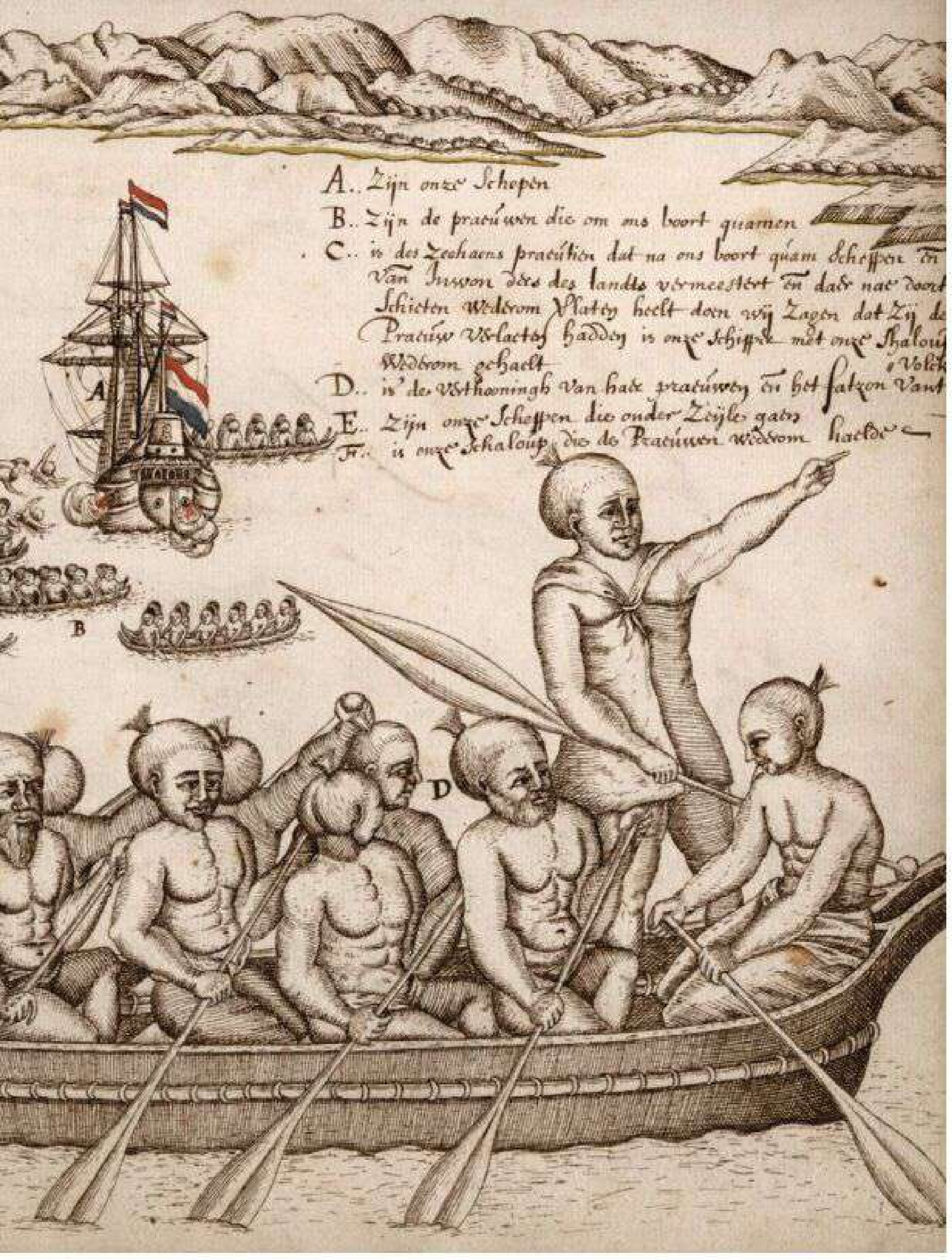
Tasman's ship's artist drew this impression of the reception he met from the Maori at Murderer's Bay

The Endeavour spent the next six months patiently surveying the entire coast of New Zealand. Cook was an accomplished mapmaker and very thorough. He proved that the country was not connected to a larger continent and found the strait between the two islands (now named after him), which Abel Tasman had missed. Accurate surveying was a dangerous activity because it required the ship to sail as close as possible to an unknown shore. At night the ship had to remain in exactly the same spot so that it could continue the next day, and if there was nowhere suitable to drop anchor, the crew would have to hold position against the tide and the weather. Cook's maps of New Zealand hold up extremely well even today with just two major errors. Banks Peninsula, near Christchurch, is shown as an island on his original chart and Cook also thought that Stewart Island to the south, was actually connected to the mainland.

Cook's approach to the native Maori was to establish friendly relations wherever possible. He was one of the first seafarers to appreciate that fresh fruit and vegetables were essential to prevent scurvy, and he stopped wherever possible to reprovision his ship. But the Maori did not always welcome the arrival of the Endeavour. When he first came ashore at Poverty Bay, four Maori attacked the sailors left behind on the beach to guard the boats. The coxswain of the Endeavour shot and killed one of the Maori. The next day Cook came ashore again and presented gifts to smooth things over, aided by an interpreter from Tahiti. But, abruptly, a Maori grabbed a cutlass from one of the sailors and was shot. Cook hatched a



Endeavour was a relatively small ship for such a long journey – just 32m long with a crew of 94


A.. Zijn onze Schepen
B.. Zijn de prauwen die om ons boort quamen
C.. is des Zeehaens prauw dat na ons boort quam
van Inwon ders des landts vermeestert en daer nae
Schieten wederom Vlatty heelt doen wij Zagen dat Zij de
Prauw verlaeten hadden is onze schipper met onze Shalou
wederom gehaelt
D.. is de vertooningh van haer prauwen en het fatzoen van
E.. Zijn onze Scheppen die onder Zeijle gaen
F.. is onze Schaloup die de Prauwen wederom haelde
A
B
D

Maori fishermen attempted to kidnap one of Cook's crew here. It is still known as Cape Kidnappers

> "Cook's approach to the native Maori was to establish friendly relations wherever possible"

plan to convince the natives that he was friendly by capturing a group of Maori at sea in their canoe, but then offering them gifts and setting them free. This unlikely scheme turned sour when his ship's boat was spotted approaching the canoe and the Maori promptly attacked. Three or four Maori were shot and killed or wounded in the ensuing fracas, and three others taken prisoner. They were treated well aboard the Endeavour and released the next day, but as a diplomatic tactic, it does not appear to have bought Cook any favours. On another occasion, a fishing canoe with 20 Maori approached the Endeavour. Using his Tahitian interpreter, Cook began trading for fish but when the interpreter's servant boy climbed down to the canoe to take the fish, he was kidnapped and the Maori paddled off at speed. Cook's men opened fire, killing two Maori and wounding a third. The young boy dived overboard in the confusion and was rescued by the Endeavour. Cook named the steep white cliffs of the nearby headland Cape Kidnappers to commemorate the incident.

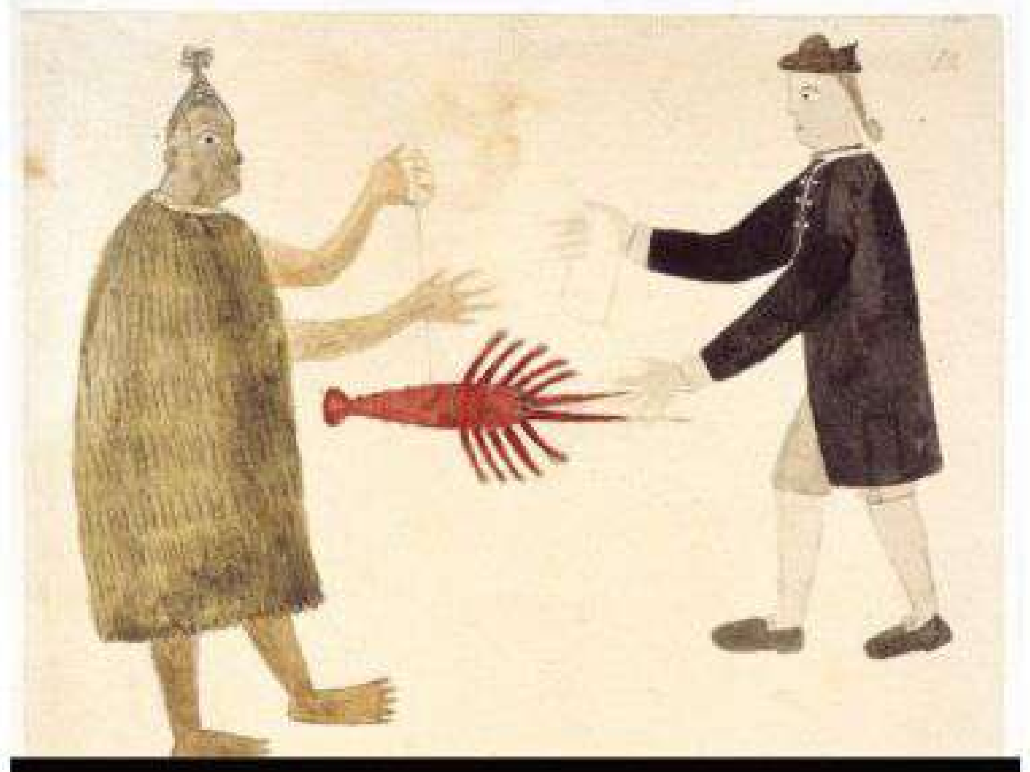
> Endeavour's stores included 10,000 cuts of meat, nine tonnes of bread, three tonnes of sauerkraut and a tonne of raisins

Once the coast of New Zealand was mapped, Cook sailed up the east coast of Australia, which was also uncharted at the time, and returned to Britain via the Cape of Good Hope (South Africa). Nicholas Young, who had been the first to sight New Zealand was again the first to see land as the Endeavour arrived back in England on 10 July 1771, after almost three years at sea. British newspapers had already run stories months earlier that the Endeavour had been lost due to storms or sunk by French warships, so his arrival caused quite a stir. Cook became a celebrity, but his journals were rewritten by a ghost writer called John Hawkesworth, who had combined the accounts of Cook and Joseph Banks, the expedition's botanist, and also made up a lot of salacious details of his own. The journals were widely criticised by the press as sensationalist and inaccurate, but Cook himself didn't have a chance to read this version as he had already put to sea again by the time that it was published.

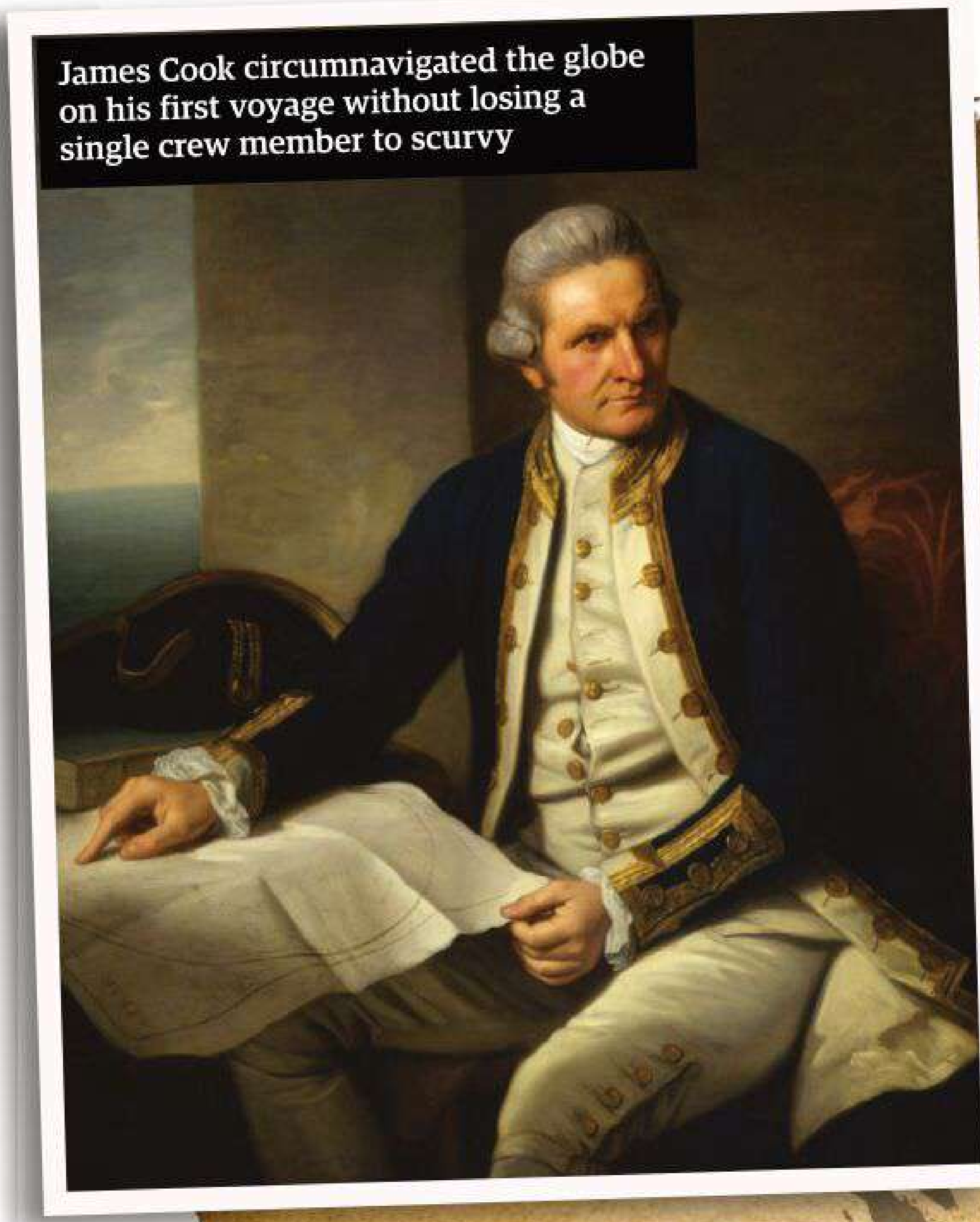
Cook wasn't the only mariner who was sailing around New Zealand at the time. Jean-François-Marie de Surville was captain of the French-Indian merchant ship St Jean Baptiste. We know from his journal that on 13 December 1769 he was looking for a safe place to anchor, away from the strong gales blowing him off course. He sailed within nine miles of the Endeavour, in broad daylight, but amazingly, neither ship spotted the other. Another Frenchman, Marc-Joseph Marion du Fresne stumbled upon New Zealand in March 1772, without realising that Cook had already discovered it three years previously. His initial encounter with the local Maori went much better than Cook's had. The French were invited to sleep at the Maori village, and they spent several weeks learning the Maori language and customs. But relations appear to have deteriorated, possibly because the Maori became interested in acquiring French firearms. This culminated in Du Fresne being killed and eaten, along with 26 of his crew. The remaining crew, who were camped on land were besieged over several days by a Maori army that eventually numbered around 1,500 warriors. The tiny French force of 26 nevertheless had vastly superior

Cook's interpreter priest

When Cook reached Tahiti, during his first voyage in April 1769, he met a Polynesian priest called Tupaia. This man was a member of a secret religious order called the Arioi, who worshipped the war god Oro. Tupaia was highly intelligent and charismatic, and had installed himself as the political adviser of one of the highest chiefs on the island and the lover of the chief's wife. Tupaia had previously met Europeans when Captain Samuel Wallis of HMS Dolphin stopped in Tahiti in 1767, and already spoke some English. He agreed to join the Endeavour for its expedition to New Zealand, partly to escape political enemies at home. When Cook asked him about the geography of the area, Tupaia was able to draw a map showing 130 islands in a 3200km radius of Tahiti. Although he hadn't visited most of them, their positions were part of an oral tradition maintained by the priesthood. Tupaia was invaluable as an interpreter for the Maori, but he didn't get on well with the Endeavour's crew. Cook described him as "a Shrewd, Sensible, Ingenious Man, but proud and obstinate". He died in December 1770 from dysentery or malaria contracted when the Endeavour stopped in Batavia on its way home.



Tupaia was also an artist and painted this scene of Endeavour's botanist, Joseph Banks, bartering for a lobster



James Cook circumnavigated the globe on his first voyage without losing a single crew member to scurvy

weapons and killed 250 Maori, including at least five chiefs in a pitched battle, as well as making several other revenge attacks over the next month before they sailed back to France.

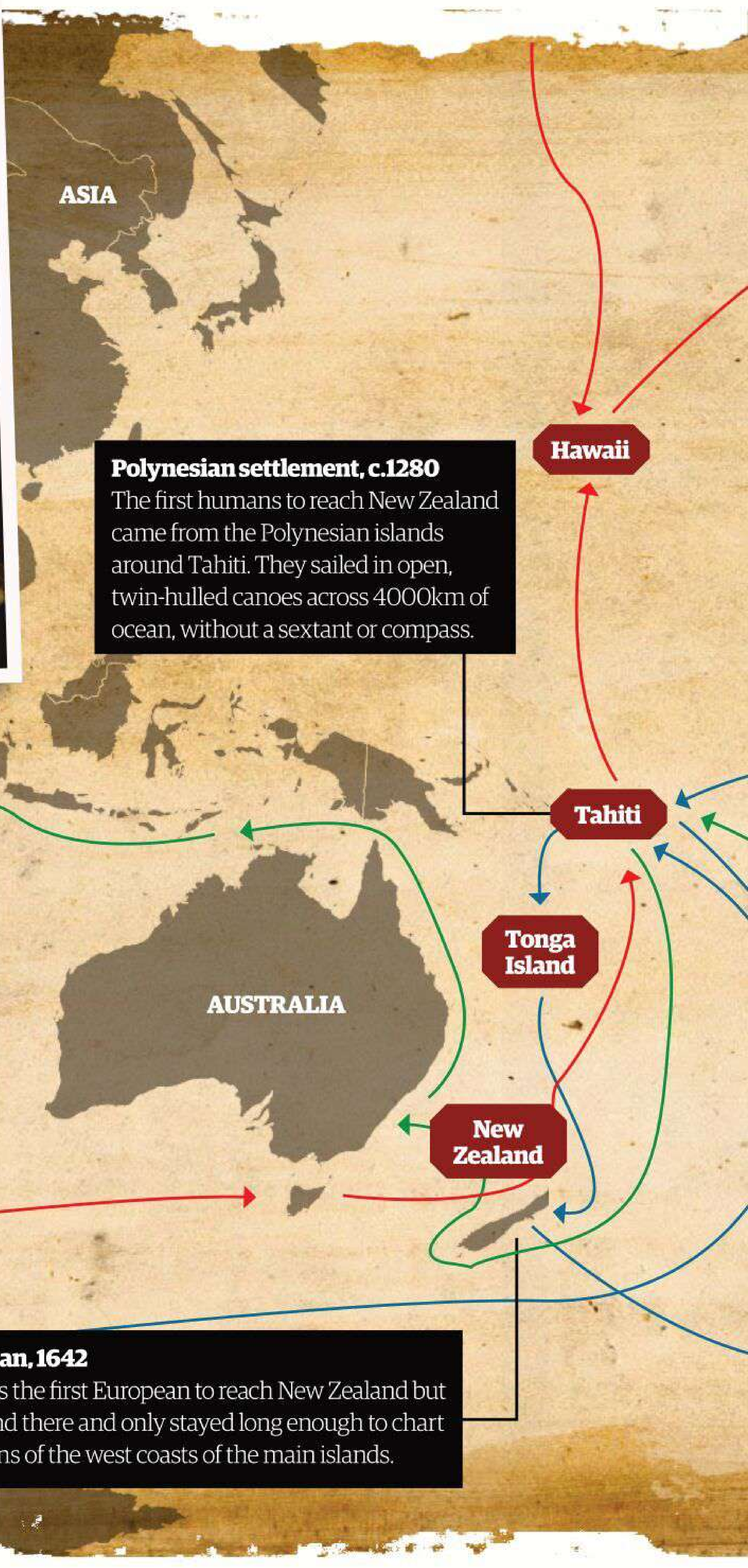
The account of du Fresne's fate would eventually cloud the European hope of New Zealand as a tempting prospect for colonisation. But in 1772 the survivors hadn't yet returned, and meanwhile James Cook had been promoted to Commander and was outfitting a second expedition to find Terra Australis. This time he planned to use New Zealand as a base to operate from. Queen Charlotte Sound provided a sheltered harbour on the northeast coast of South Island, facing into the Cook Strait that separated the two islands. For this voyage, Cook sailed in the Resolution, together with a companion ship, HMS Adventure, captained by Tobias Furneaux. The ships set off on 13 July 1772 and sailed down to the Cape of Good Hope and then ventured south, reaching the Antarctic Circle on 17 January 1773. Even in the middle of the Antarctic summer, they couldn't sail any further south due to the pack ice, and on 8 February the Resolution and Adventure became separated in thick fog. Cook and Furneaux had anticipated this and arranged that they would rendezvous at Queen Charlotte Sound. The two ships met up there in May and then sailed north to Tonga to resupply. On their way back south for their next attempt to penetrate the Antarctic Circle however, Adventure and Resolution became separated again, this time by a storm. Adventure arrived at Queen Charlotte Sound on 30 November 1773 but Cook had already given up waiting and had ordered the Resolution southward four days earlier. As Captain Furneaux waited in vain for Cook, his supplies began to run low. On 17 December, he sent a party ashore to gather vegetables, but by nightfall they had not returned. The next day Furneaux sent a party of armed marines to investigate and they found the ship's boat abandoned, and nearby about twenty baskets tied up. These contained roasted meat, still warm from the fire, and near them were discarded shoes belonging to the missing crew. When the marines rowed round to the next cove, they found hundreds of Maori gathered, together with a great pile of human body parts and entrails being picked over by dogs. The tattoos and identifying scars on some of the severed hands and feet left no doubt that they belonged to their unfortunate crew members.

Cook's goat was the first animal to travel around the world twice and it was awarded a silver collar

Lieutenant James Burney, who was in charge of the marines, wrote in his journal that he felt this had not been a premeditated murder, but was probably a quarrel that had got out of hand. The subsequent cannibalism was probably part of a 'whangai hau' ceremony, which the Maori believed allowed them to consume the spirit of an enemy and his ancestors.

Captain Furneaux sailed home for England shortly after this incident while Cook remained to explore the Antarctic and South Pacific for another year, so he didn't learn of this grisly event until much later. Cook's third and final voyage was in search of the Northwest Passage between the Pacific and Atlantic through the islands off the north coast of Canada. But he again sailed via New Zealand and used Queen Charlotte Sound as a stopping point on 12 February 1777. The Maori there were quite apprehensive when they recognised Cook because they feared he would take revenge for the deaths of Furneaux's crew. Despite the urgings of his own men to order such an action however, Cook refused and instead invited the Maori chief, called Kahura, to have dinner with him in his cabin.

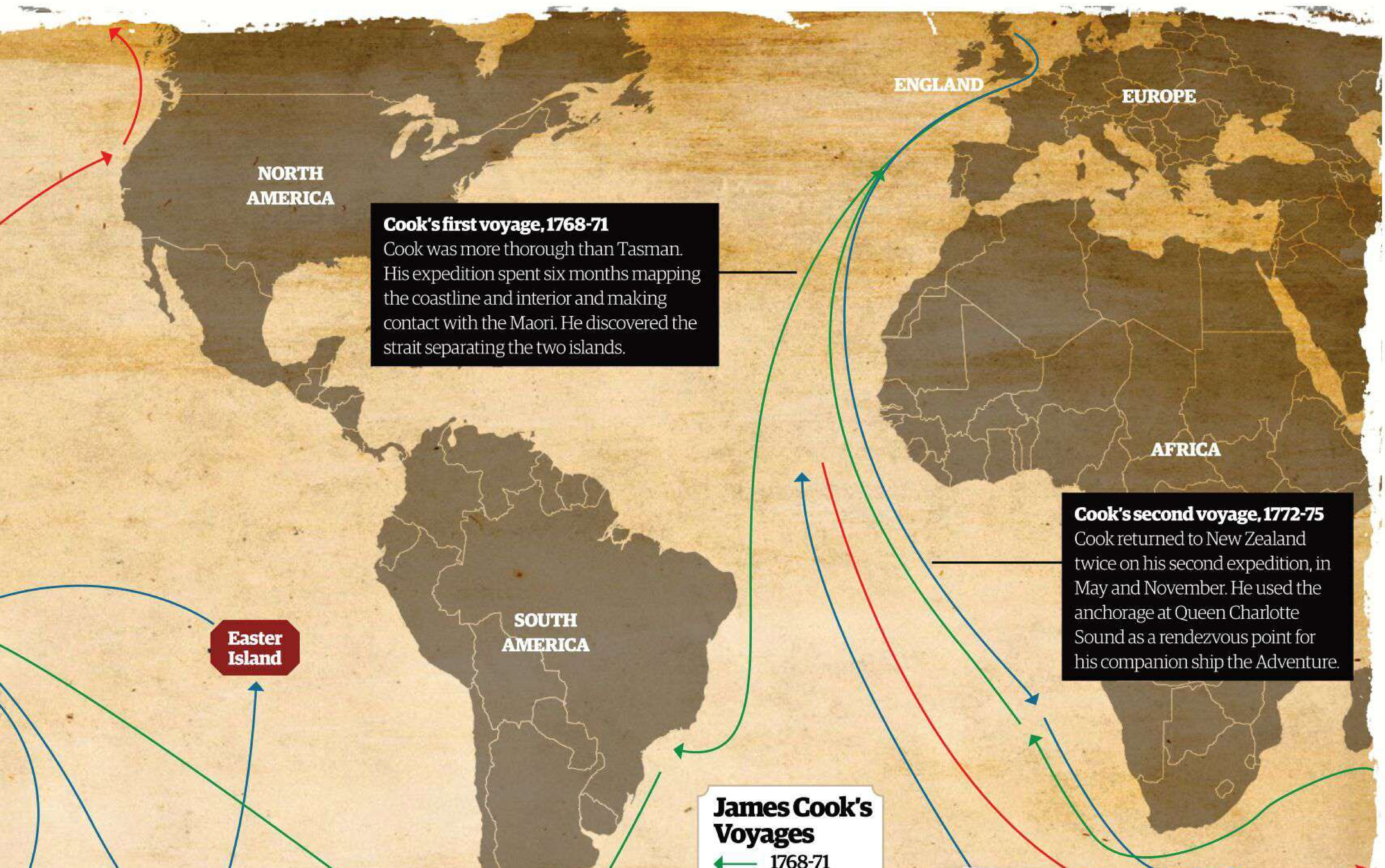
James Cook's calm resolve in the face of such frightening provocation was just one of the qualities that made him such an effective explorer. His contribution to the understanding of this distant and strange new land was unparallelled and his voyages laid the foundation for the new disciplines of ethnology and anthropology.



Polynesian settlement, c.1280
The first humans to reach New Zealand came from the Polynesian islands around Tahiti. They sailed in open, twin-hulled canoes across 4000km of ocean, without a sextant or compass.

Cook's third voyage, 1776-79
By his third voyage, Queen Charlotte Sound had become a routine waypoint. Cook spent two weeks there, on his way north to look for the Northwest Passage.

Abel Tasman, 1642
Tasman was the first European to reach New Zealand but he didn't land there and only stayed long enough to chart short sections of the west coasts of the main islands.

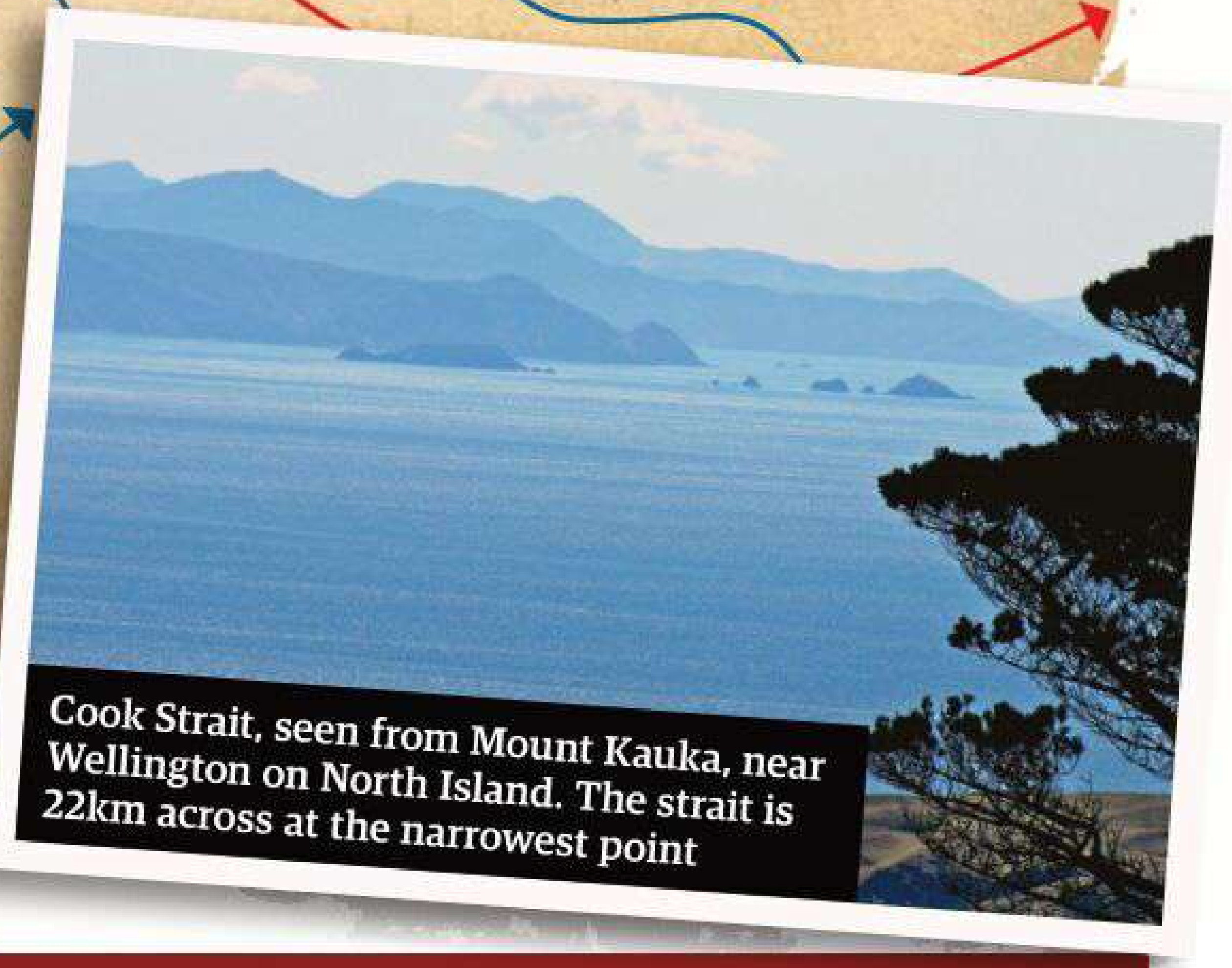


Cook's first voyage, 1768-71
Cook was more thorough than Tasman. His expedition spent six months mapping the coastline and interior and making contact with the Maori. He discovered the strait separating the two islands.

Cook's second voyage, 1772-75
Cook returned to New Zealand twice on his second expedition, in May and November. He used the anchorage at Queen Charlotte Sound as a rendezvous point for his companion ship the Adventure.

James Cook's Voyages

- ← 1768-71
- ← 1772-75
- ← 1776-79



Cook Strait, seen from Mount Kauka, near Wellington on North Island. The strait is 22km across at the narrowest point

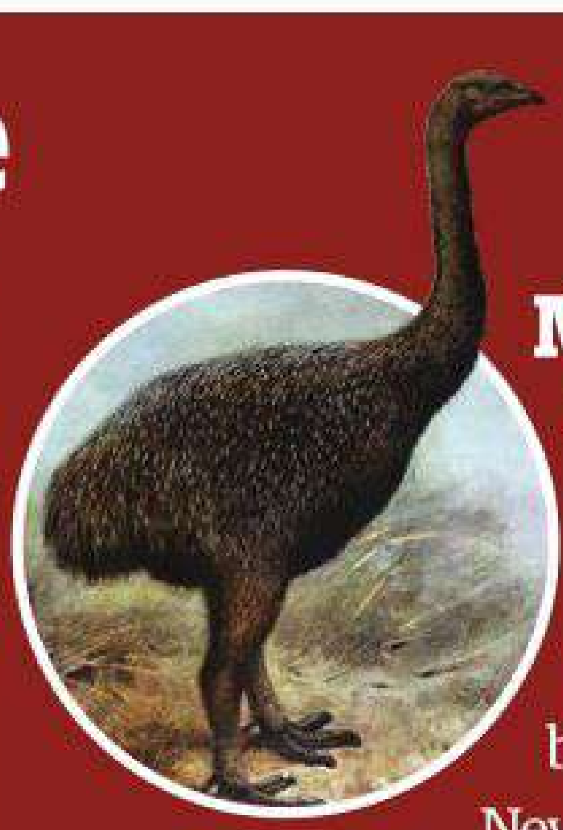
New Zealand's unique wildlife

Tuatara

The tuatara is not strictly speaking a lizard, but a separate reptile order that evolved 200 million years ago. They are endangered and found only on island nature reserves.

Southern kauri

This conifer provides the largest volume of timber of any tree species. It has remained almost unchanged for 190 million years and kauri forests are among the world's most ancient.



Moa

Nine species of these giant flightless birds lived in New Zealand until they were hunted to extinction by the Maori. The largest were twice as tall as a human.

Giant weta

Lack of mammal predators allowed these grasshopper-like insects to evolve to huge sizes. The largest weta ever found had a 10cm body and was heavier than a sparrow!

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Captain James Cook

Charting the Uncharted

The explorer who made waves throughout the world on his voyages across uncharted oceans

Captain James Cook stands alongside Sir Walter Raleigh and Sir Francis Drake as one of Britain's most renowned sailors and explorers. His three voyages abroad resulted in the discovery of New Zealand, Tahiti, Hawaii and the east coast of Australia, which helped Britain expand its global empire and learn much about these far-flung lands.

Born in Marton, Yorkshire, in 1728, Cook began his working life as an assistant shopkeeper, but quickly realised that he was destined for a career at sea. He became an apprentice master mariner by the age of 18, before earning the rank of mate on the ship Friendship six years later. He turned down the opportunity to join a merchant ship in 1755, choosing instead to enrol in the Royal Navy. Within two years he had risen to the rank of master of the Pembroke, a 64-gun ship headed for Canada to fight against the French in the Seven Years' War.

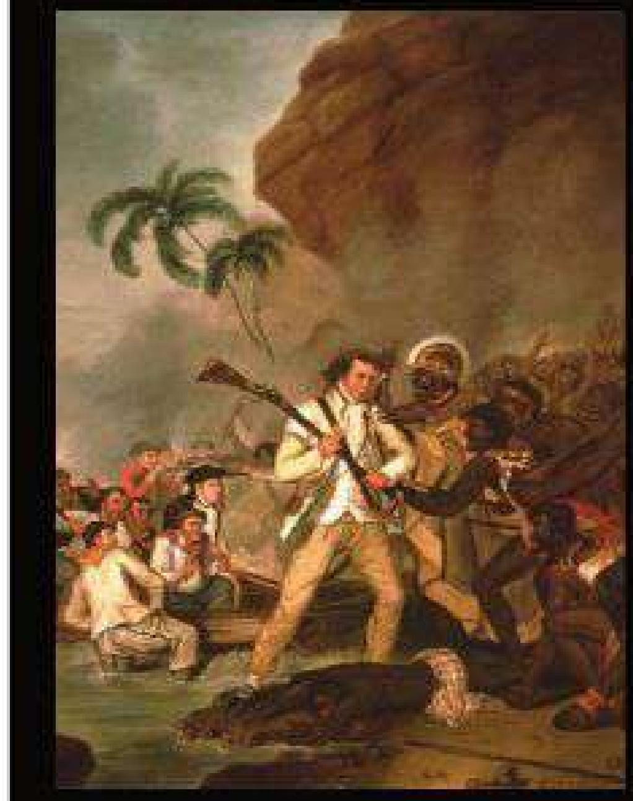
It was here that he first made his name in naval circles by charting the Saint Lawrence river. He learned his craft under surveyor Samuel Holland, who taught him how to use the charting tools and draw maps, before striking out on his own and mapping Gaspe Bay. He then moved onto the greater task of mapping the key battleground of the Saint Lawrence river.

He spent months working under cover of darkness to avoid detection by French forces, eventually creating the map of the river. This enabled the British to sail down the river and capture Quebec, which was a major turning point in the war. Cook was heralded as master surveyor and spent the next eight years mapping out the east coast of Canada. His contribution to the war effort was recognised, and this success, along with his studies of mathematics and astronomy, earned him the commandership of the Endeavour.

Cook and his men saw the Tahitians dyeing their skin, starting the tradition of sailors tattooing themselves

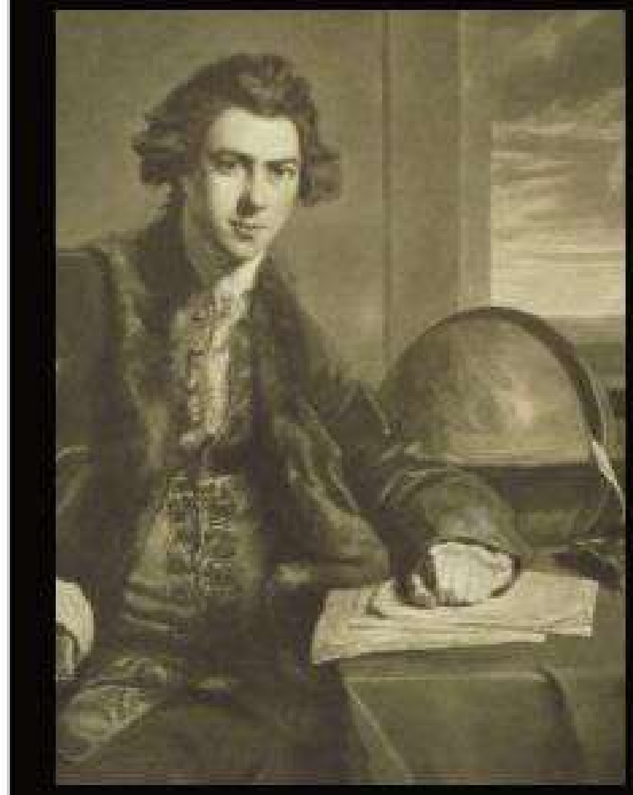
Captain James Cook

Enemies



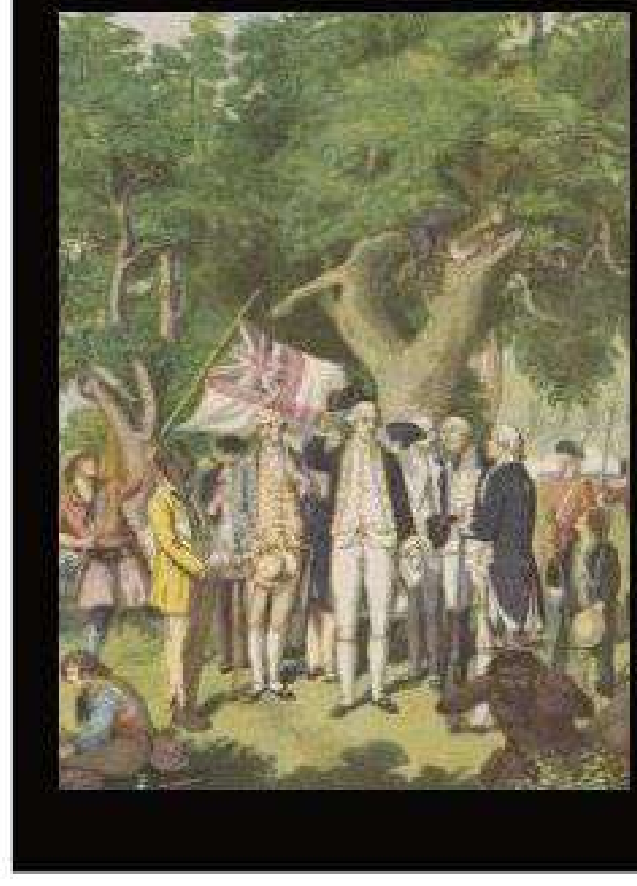
Hawaiian natives

Although the Hawaiians treated Cook as a god when he arrived on the island, his relationship with the natives soured quite quickly. This culminated in Cook being fatally wounded when he arrested a Hawaiian king following the theft of one of his boats.



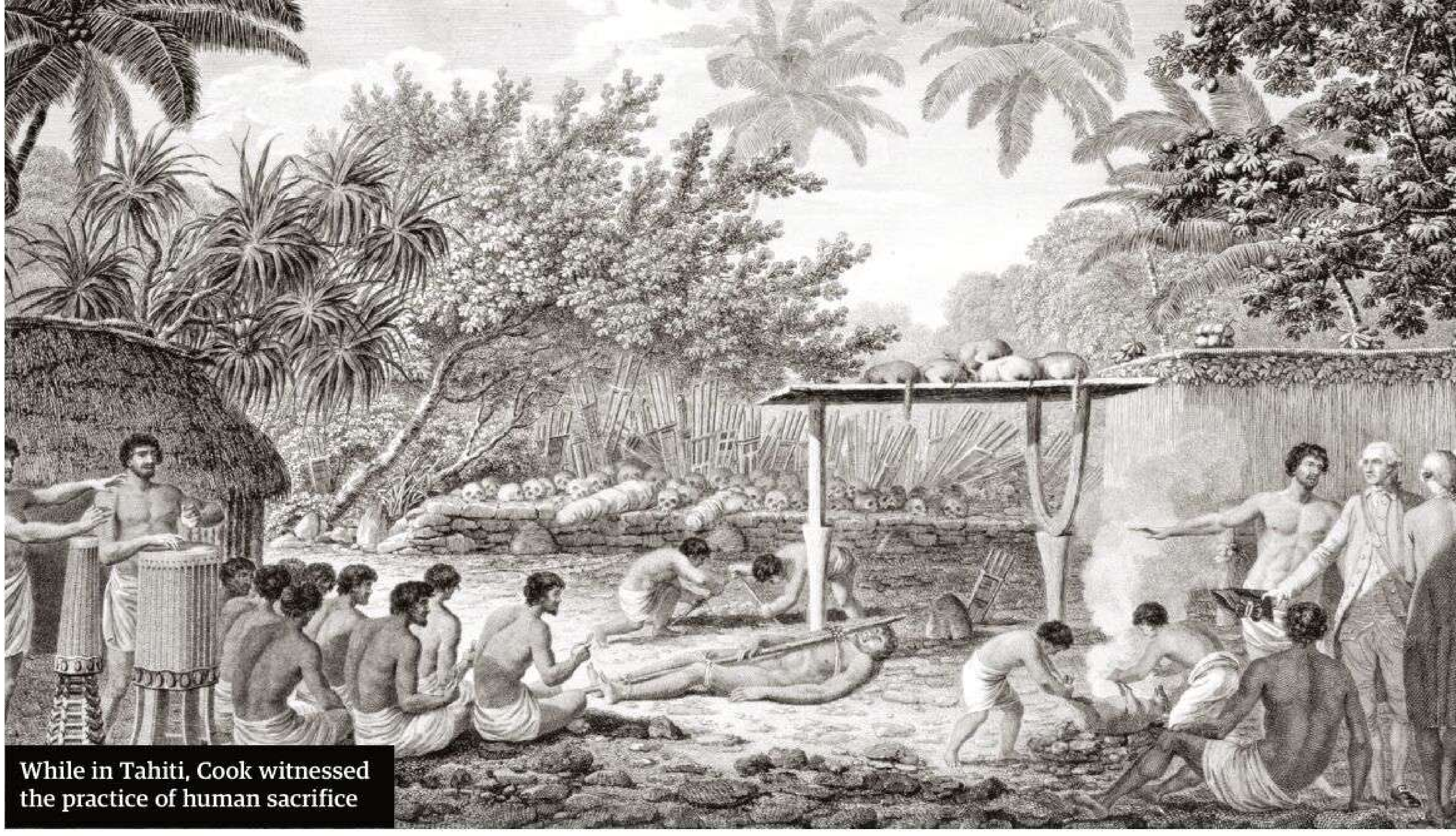
Joseph Banks

The famed botanist travelled with Cook and collected plants on the captain's first trip to Tahiti, New Zealand and Australia. However, he didn't join the second journey after he and Cook had a falling out; all because the captain didn't allow Banks to have an extra deck on the ship.

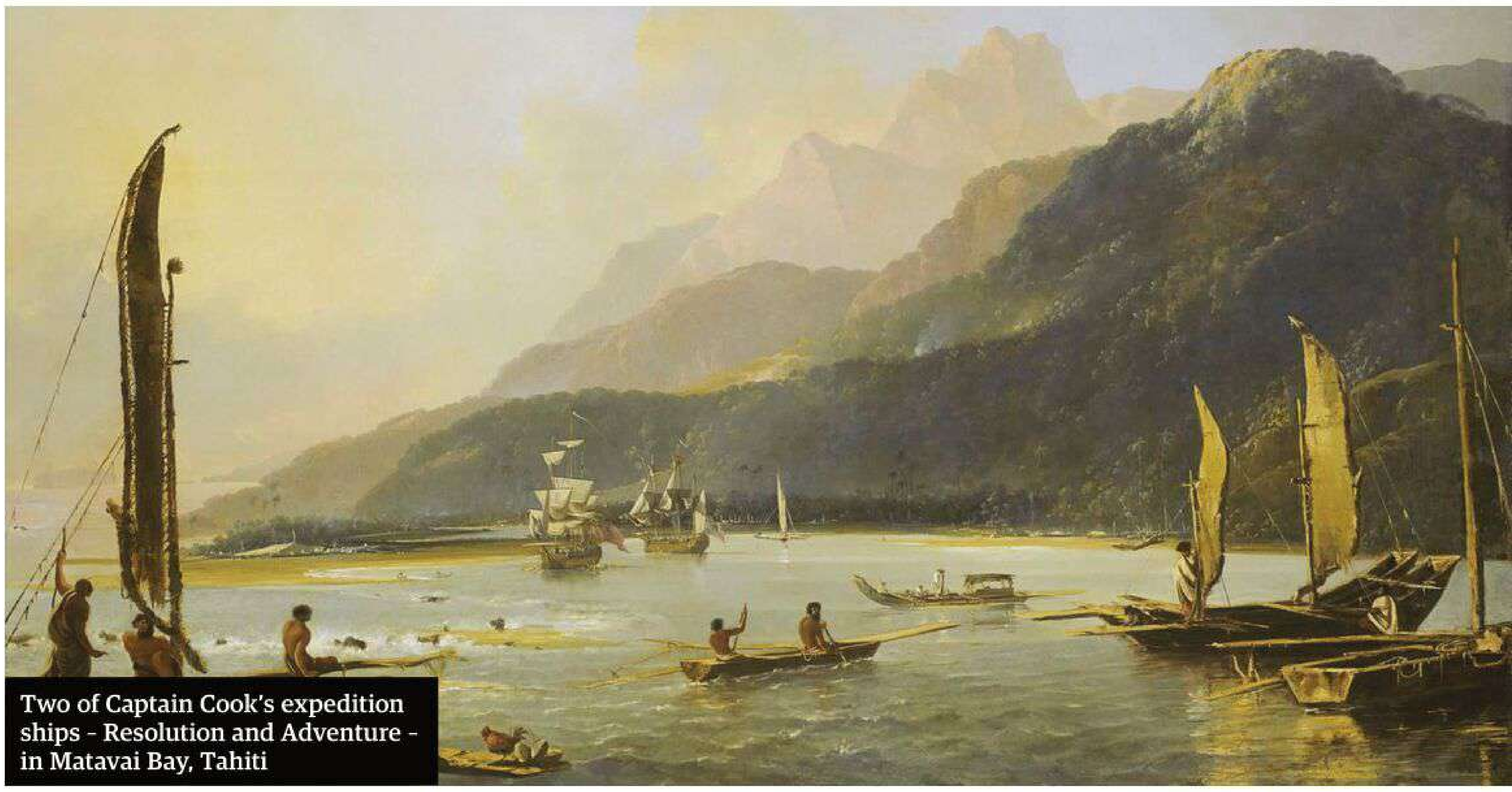


Aborigines

The natives of Australia did not appreciate Cook and his crew's arrival on their lands. It was reported that as the fleet arrived in Botany Bay, the Aborigines threw their spears at the ships. Cook's time in Australia was marred by distrust and aggression from both sides.



While in Tahiti, Cook witnessed the practice of human sacrifice



Two of Captain Cook's expedition ships – Resolution and Adventure – in Matavai Bay, Tahiti

Astronomers knew that Venus was set to cross over the Sun in June 1769, but it was only going to be visible from the Southern Hemisphere. The British government decided it would be valuable for this to be observed, so put together a crew led by Cook. The observation was the primary goal of the voyage, although there was also a keen interest in exploring the rumoured Southern Continent. Also on board the ship were the astronomer Dr Charles Green and botanist Joseph Banks, who were tasked with observing the transit of Venus and collecting exotic plants respectively.

Cook set out from Plymouth in August 1768 and landed in Tahiti, the largest island in French Polynesia in the South Pacific. He was able to observe the Transit of Venus across the Sun to achieve his primary mission, and then pushed further west to New Zealand. He circumnavigated the island before becoming the first European to reach the east coast of Australia in 1770.

While Cook had been greeted warmly by the Tahitians, the Aborigines of Australia were not so happy to see the crew, attacking the Endeavour with spears. The ship's greater firepower proved decisive, however, and Cook came ashore at Botany Bay, claiming the land for Britain and naming it New South Wales. After further exploration, Cook and his crew triumphantly returned home to Britain after almost exactly three years away.

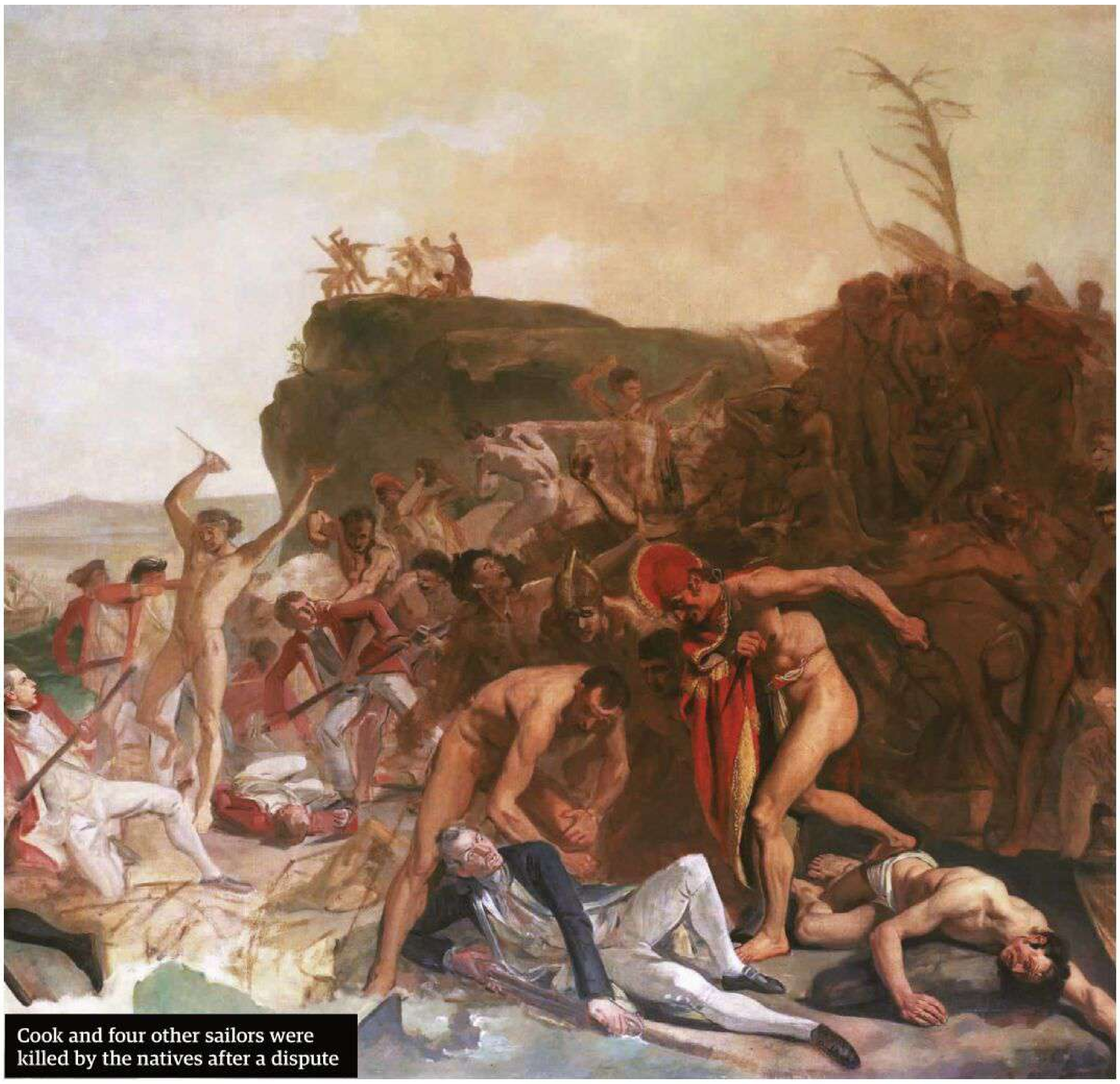
Only a year later Cook was off again, this time with the ships Resolution and Adventure, attempting to discover more of Australia. In January 1773, he crossed over the Antarctic Circle, where the bitter temperatures were too cold and they were forced to turn back. However, they did manage to return to New Zealand and Tahiti as well as discover Easter Island and Tonga, and confirm that a giant southern super-continent didn't in fact exist.

Cook's third and final voyage saw him return to North America as he searched once again for a mythical site. This time he was looking for the North-West Passage, a much-discussed route through North America that linked the Atlantic and Pacific oceans. Once again Cook sailed via Australia, New Zealand and Tahiti before travelling up the western coast of North America. On their way they sighted Hawaii, but didn't stop off. The two ships continued their journey towards Alaska and through the Bering Strait, but were barred from going any further by thick Arctic ice.

They headed back to Hawaii in January 1778, where they were greeted with complete reverence. By a stroke of luck, Cook and his men arrived on Hawaii as the islanders were celebrating a festival based around the legend of the sea god Lono. The natives believed Cook to be a god and the sailors were looked after extremely well. They attempted to leave the island in February, but had to return

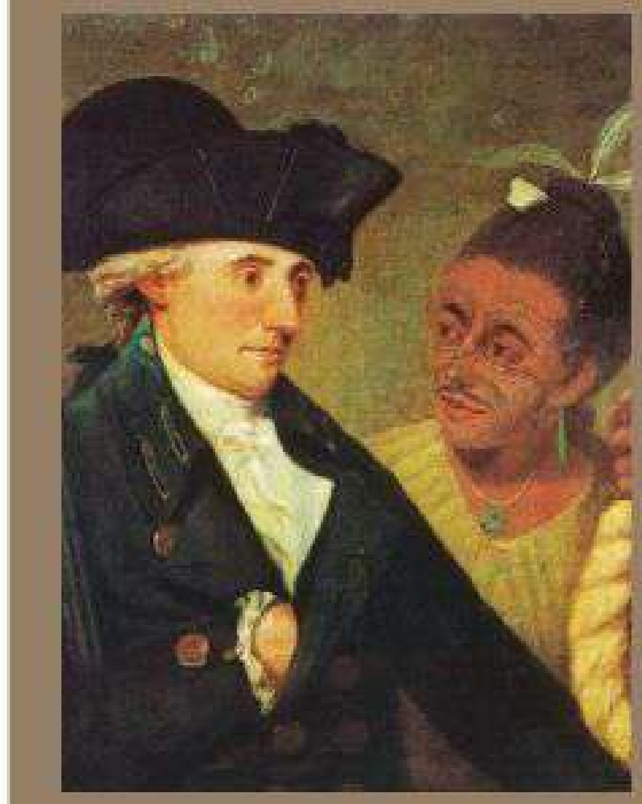
> "He gained a reputation as a responsible and caring ship commander, though he was prone to violent outbursts of temper"

> Cook has no direct descendants, as his six children died without having any children of their own



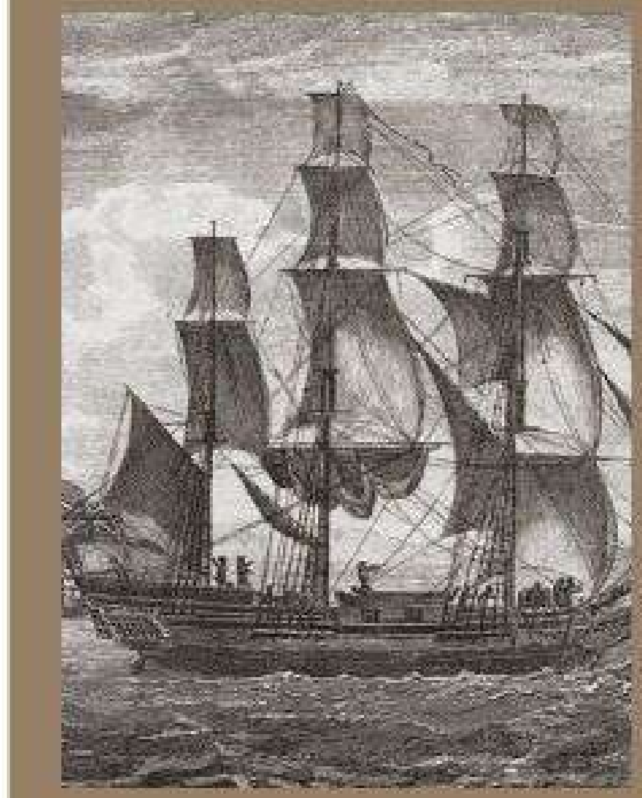
Cook and four other sailors were killed by the natives after a dispute

Allies



Captain Charles Clerke

Cook's trusted deputy, Clerke accompanied him on his three historic voyages. Upon Cook's death in Hawaii, Clerke took charge of Discovery and Resolution but died of consumption before the ships made it back to Britain.



Cook's crew

Scurvy was a constant danger on long journeys at sea until Cook came along. He took the health of his crew very seriously and his insistence on cleanliness on board the ship and the eating of fresh vegetables saved many of his crew from the fatal illness.

John Harrison

The clock maker thought he had solved the problem of measuring longitude at sea, but his invention needed to be tested. Cook was the man for the job and did so, proving that Harrison's invention worked, aiding generations of sailors in navigating the world.

swiftly because of damage to Resolution. When the time came for them to leave again, a dispute broke out over a boat stolen from one of the ships. Cook tried to kidnap a local leader as a hostage for negotiation, leading to a skirmish in which Cook was fatally stabbed on 14 February 1778 at Kealakekua Bay. He was buried at sea and the crew returned home to confirm the non-existence of the North-West Passage and announce the death of one of the country's greatest sailors and explorers.

Despite his biggest claim to fame being his discovery of many of the islands in the South Pacific, Cook also made a much more important contribution to naval history. One of the biggest killers on long voyages was scurvy, a deficiency of vitamin C. Symptoms included fatigue, swollen and painful gums, jaundice, and eventual death.

Little was known about how to prevent this disease, but Cook took on advice from physicians and insisted that the ship was kept as clean as possible and the men ate as many fresh fruits and vegetables as they could. These rules resulted in his initial journey becoming the first long voyage to report no deaths from the disease. It is often said that Cook's progression through the naval ranks made him much more sympathetic to the needs and feelings of his crew, so this may be part of the reason he took such a strong stance on creating the best possible conditions for his sailors.

While Cook cannot be credited with the discovery of the prevention, he can certainly be commended for ruthlessly enforcing it and saving untold numbers of lives at sea.

Although conditions on board Cook's ships were clearly better than most and he gained a reputation as a responsible and caring ship commander, he was prone to violent outbursts of temper. His men suffered increasingly at the hands of these ferocious episodes and many believe that it was one such bout of fury that led to his eventual stabbing and death.

> Despite never holding the rank of captain, he was in command of a ship so may be described as such

Cook's other major mark on naval history is in the field of navigation. John Harrison, an English clock maker, had designed a device for measuring a ship's longitude while at sea, something that had previously been nigh-on impossible. Cook tested it out on the Endeavour and confirmed that Harrison's machine worked. This was a historic landmark in navigating the oceans and assisted Cook and future sailors greatly as they explored further afield.

Cook is certainly a British and naval hero, combining technical excellence with a thirst for knowledge and discovery. His long sorties abroad never failed to return some new kind of information, whether the discovery of new lands or the confirmation that none such existed. His quick progression through the ranks of the Navy showed him to be a masterful sailor and the fact that he spent ten years at sea exploring previously uncharted waters is a testament to that skill. He can certainly be accused of a lack of cultural sensitivity toward the natives of the lands he visited, but that doesn't seem to be far removed from the general attitudes of the day.

During his 11 years as the driving force of British naval missions abroad, Captain James Cook blazed a trail across the oceans. He left in his wake discoveries of new lands, vast improvements in the health of sailors and the implementation of new navigation technology. As well as being a pioneer in his field, he was brave, intelligent and always willing to seek out new adventures, traits that have well and truly secured his place in the pantheon of the world's greatest explorers.

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Discovering THE American West

They ventured across the country through unknown terrain, facing danger and discovery at every turn. This is the journey of Lewis and Clark

When the Revolutionary War ended in 1783, the founding fathers had grand ideals of what the vast continent had to offer, but little notion of its sprawling landscape and what lived there. It was an incredible wilderness full of possibilities and dangers, from which Meriwether Lewis and William Clark had no guarantee of a safe return.

The shape of the young American nation would change drastically when Napoleon Bonaparte offered to sell the French territory of Louisiana, a colossal area of 2,144,500 square kilometres that would double the size of the USA. President Thomas Jefferson worked quickly to negotiate the Louisiana Purchase for $15 million in 1803, and he knew exactly what he wanted from it. He was desperate to know if there was a Northwest Passage that would connect the Mississippi and the Pacific Ocean, thus greatly increasing trading possibilities, and he had secretly asked Congress to approve and fund the expedition six months before the purchase was officially announced.

The president already had the perfect leader for the expedition. Jefferson's secretary, Meriwether Lewis, was a military veteran in excellent physical shape with a keen interest in the study of wildlife, and his loyalty and dedication were unquestionable. Lewis immediately began to prepare, taking lessons in navigation and absorbing every piece of available information about the geography and people of the region. However, even with all his study, he knew there would be myriad surprises ahead.

Lewis invited his former commanding officer, William Clark, to join him as co-captain, a move that partly stemmed from the diplomatic aspect of the voyage. They would be the ones to convey to the many Native American tribes on their way westward that they were now living under new masters – a difficult conversation they hoped

would be smoothed over with gifts, including a specially minted coin and some demonstrations of superior firepower. Clark's experience as a soldier and frontiersman combined with Lewis's strong leadership and diplomacy made them the perfect match, and he readily agreed.

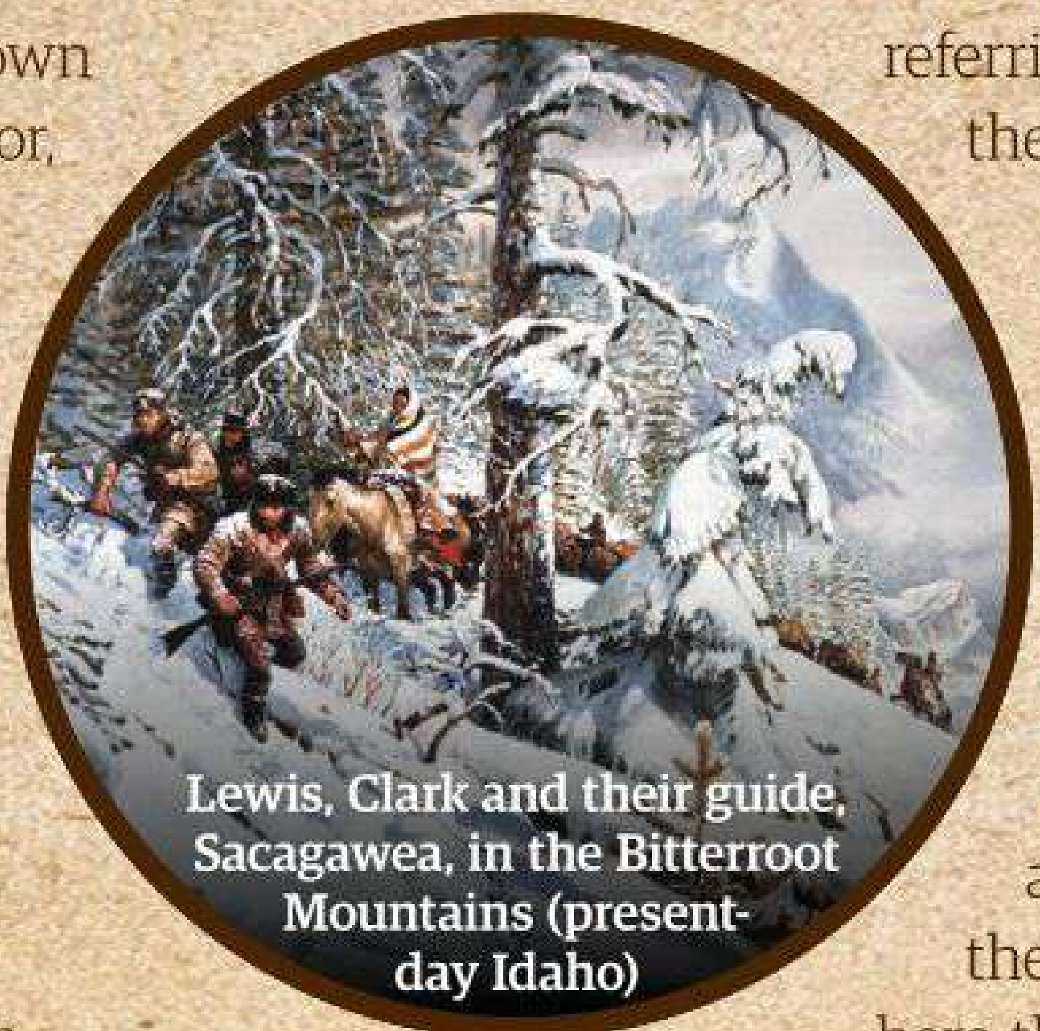
Lewis sailed the newly constructed narrowboat from Pittsburgh down the Ohio River, and he met with Clark near Louisville, Kentucky, before setting up their winter training camp on Wood River. There would be 33 core members of the Corps of Discovery, which would finally set out on 14 May 1804 on the Missouri River.

The voyage did not get off to the best start. Discipline was occasionally poor, and on 17 May, three men were court-martialled for being absent without leave. Meanwhile, Lewis was given his own warning on 23 May, when he fell six metres from a cliff before managing to stop his fall with his knife, just barely saving his own life. There was no margin for error, and the brooding, solitary Lewis was reminded that wandering alone was a dangerous habit. Of course, that would not stop him.

The weather was fine, but it was hard going, with the fierce Missouri River frequently needing to be cleared to allow the boats free passage, and mosquitoes, ticks and illness proving to be a growing problem. It was during this summer that the expedition suffered its only fatality, when Sergeant Charles Floyd died of appendicitis. However, Lewis's journeys into the woods provided them with an abundance of new discoveries. A meeting with the Oto and Missouri Native Americans on 3 August went very well, with speeches and exchanges of gifts getting the reception Lewis and Clark had hoped for.

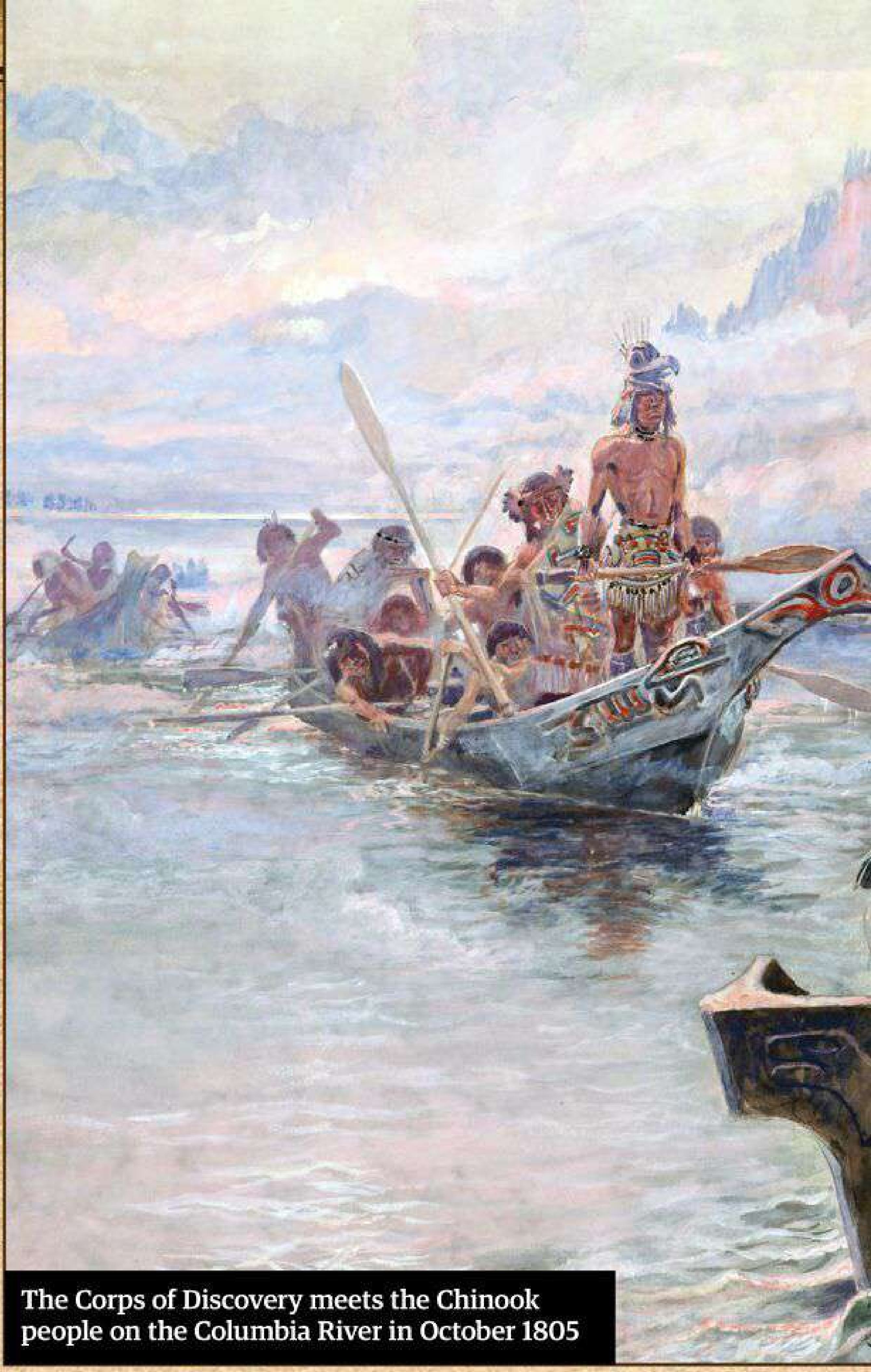
Another successful meeting was held on 30 August, this time with the Yankton Sioux, and the Corps of Discovery entered the Great Plains in early September. It was here that the natural history aspect of the mission really began, as never-before-seen animals roamed. Beasts that seem archetypally American today (elk, bison, coyotes and antelope, for example) were a new discovery by these awe-struck men from the east. But the animals weren't the only ones who called this land home, and the expedition was about to be reminded that, to some, they were trespassing.

Although every encounter with Native American tribes had been peaceful so far, tensions quickly ran high when they met the Teton Sioux (now known as the Lakota Sioux) near what is now South Dakota, in September. The travellers had been warned that this tribe could be unfriendly, and it seemed that conflict was inevitable following a series of difficult meetings and demands for one of their boats. Crisis was averted thanks to the intervention of their chief, Black Buffalo, although Clark's diaries show that all was not forgiven, referring to them as, "vile miscreants of the savage race."



Lewis, Clark and their guide, Sacagawea, in the Bitterroot Mountains (present-day Idaho)

They travelled on northwards, reaching the Mandan settlements (a heavily populated area with more people calling it home than Washington DC at the time) at the end of October. Quickly, they began work on their winter camp, Fort Mandan, as the cold weather bit harder than the men had ever experienced. It was here that they made one of the most important decisions of their voyage. They hired the French-Canadian Toussaint Charbonneau, a fur trader, and his 16-year-old Shoshone wife Sacagawea as interpreters. Lewis and Clark were heading to the mountains, and although they had no idea quite how colossal the range was, they knew they would need horses. Native speakers would be invaluable for trade as well as safe passage. Sacagawea gave birth to her son, Jean Baptiste (nicknamed Pomp by Clark), during the winter, and many credit this woman and her child accompanying the travellers with being the reason they were treated so hospitably by tribes they met on the rest of the journey.



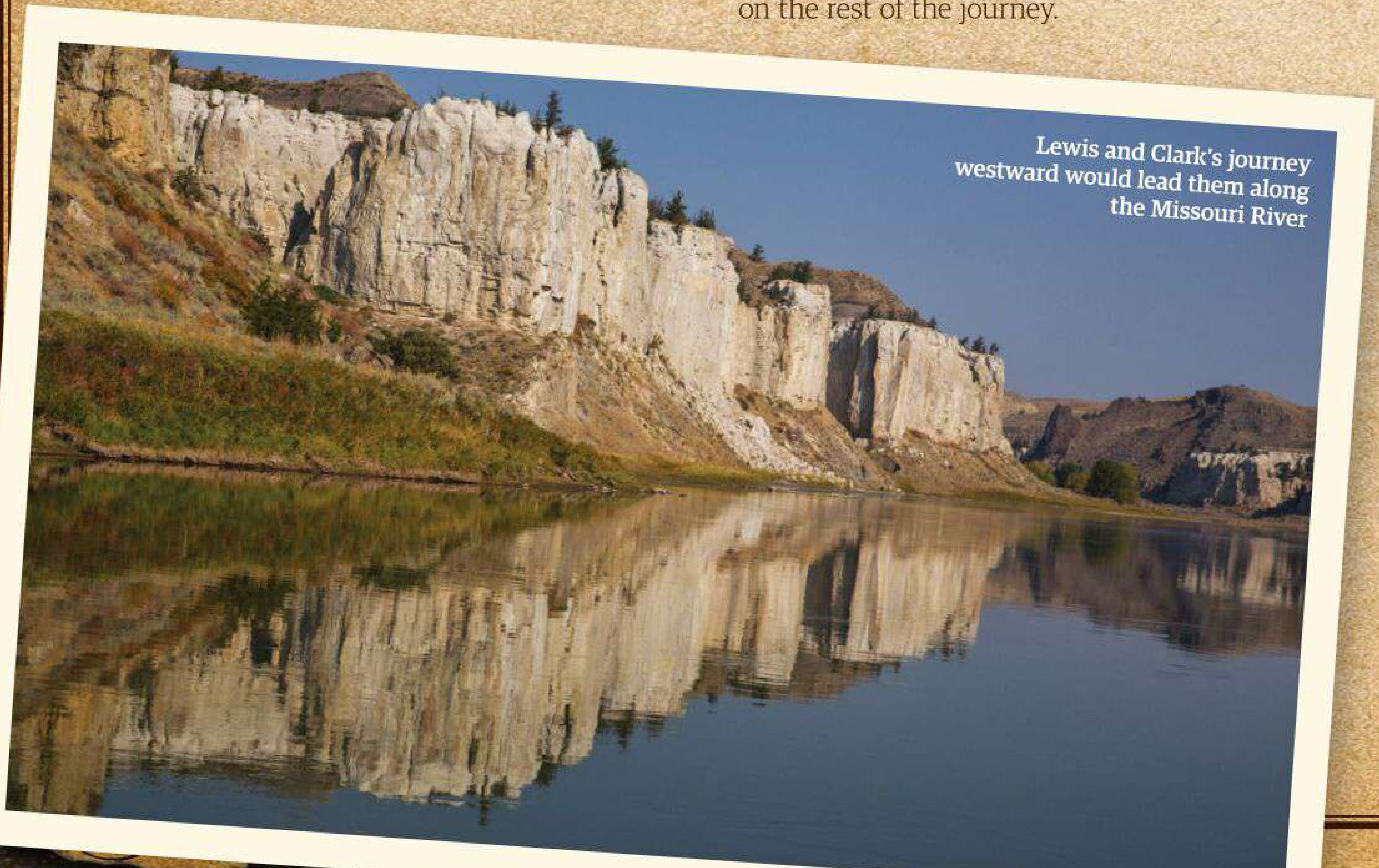
The Corps of Discovery meets the Chinook people on the Columbia River in October 1805

Having sent a small group back to St Louis with samples of their findings, the Corps of Discovery set out again on 7 April. They made excellent time through unexplored country, and it became clear that bringing Sacagawea was a wise decision indeed. Not only did she help them to forage, showing them what was edible and what wasn't, she also had the presence of mind to rescue important papers when a boat capsized.

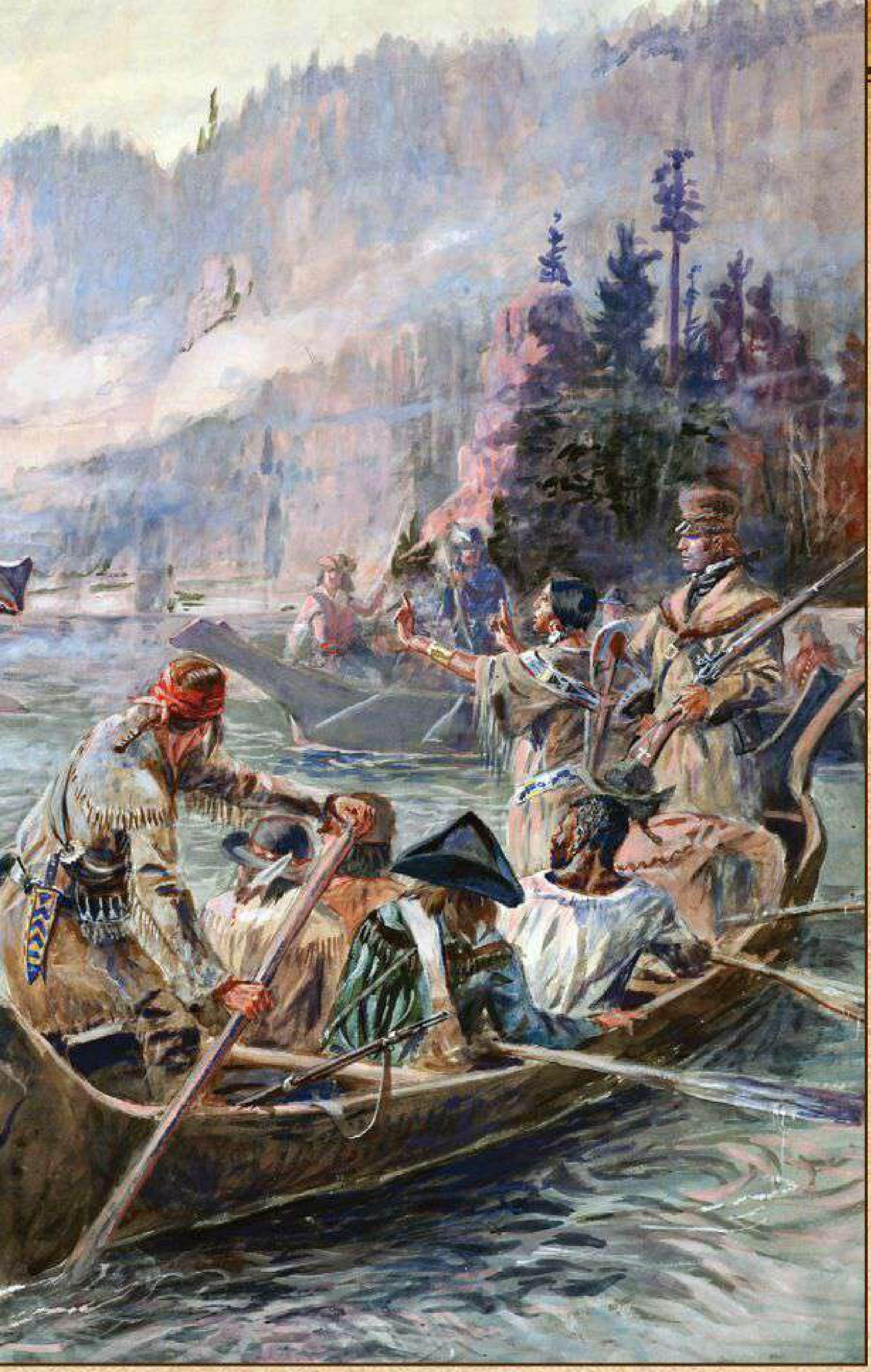
Then, at the start of June, everything nearly fell apart. They had reached a fork in the Missouri River, and Lewis and Clark had to make a choice. If they chose poorly, they would be taken completely off course, and it was an incredible relief when they reached the waterfalls they had been told they would find if they were on the right track. However, the right track was not an easy path to take, and the Great Falls were another colossal challenge. There was a constant threat from bears and rattlesnakes, and several crewmembers were ill.

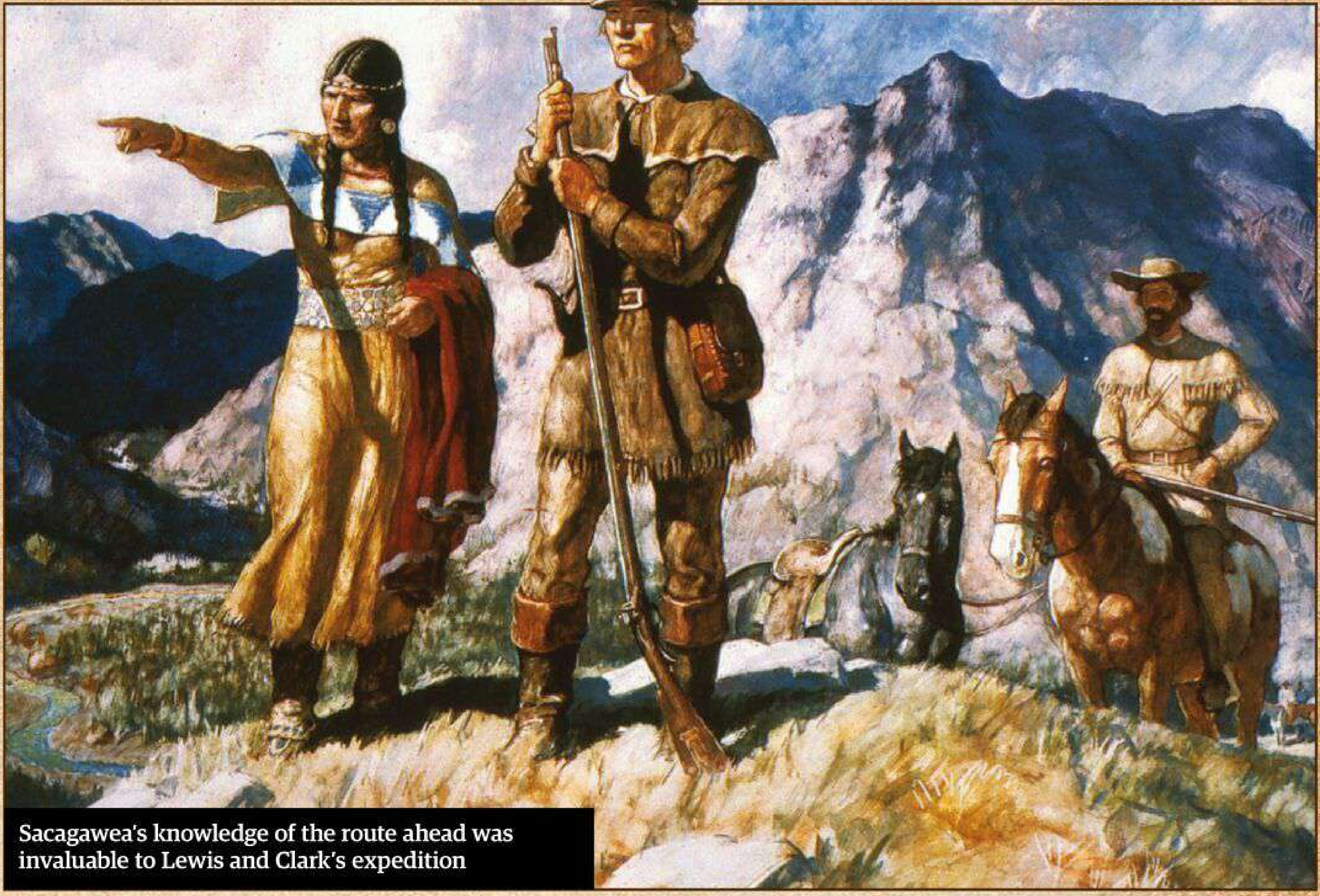
They would have to go the long way around, 29 kilometres over difficult terrain, carrying everything that they needed. There was no way back. Incredibly, the crew pulled together and accomplished this amazing feat. It's a testament to the spirit of these men, their awareness of the importance of their mission and the leadership of Lewis and Clark that the only thing lost on this brutal detour was time, and the dream of Lewis's iron-framed boat, which simply did not work.

Time, of course, was of the essence. Despite making the right choice at a second set of forks, winter was coming and there were still mountains to climb. They needed to reach the Shoshone tribe and trade for horses if they were to have any hope of reaching their goal, and as they grew closer, Sacagawea helped to navigate through the territory of her youth. However, finding the tribe proved to be difficult, and Lewis and a scout broke off from



Lewis and Clark's journey westward would lead them along the Missouri River





Sacagawea's knowledge of the route ahead was invaluable to Lewis and Clark's expedition

> "They had reached a fork in the Missouri River, and Lewis and Clark had to make a choice. If they chose poorly, they would be taken completely off course"

the group while Clark continued with the rest of the party up the river. Another crushing blow was delivered when Lewis saw the full extent of the mountains they would have to cross. There was no Northwest Passage through the Rocky Mountains.

Finally, they found the Shoshone, who had never seen anyone like these strangers before. Sacagawea acted as an interpreter, and, while speaking, realised that the tribe's chief, Cameahwait, was her brother. This amazing stroke of luck secured the horses needed for their mountain crossing, after two weeks resting at the Shoshone camp.

In September, they began their mountain crossing at the Bitterroot Range with a Shoshone guide named Old Toby. The weather was against them, Toby lost his way for a while, and the group faced the very real possibility of starvation over two agonising weeks. They finally found their way to the settlement of the Nez Perce on 23 September, who decided to spare the lives of these wretched, starving travellers. In fact, they were incredibly hospitable, sheltering them for two weeks and even teaching them a new way to build canoes. Their first downstream journey may have seemed like a blessed relief, but the rapids were fantastically dangerous, and they were watched with great interest as they made their way down the perilous waters. Once again, they overcame the odds.

On 7 November, Clark was convinced that he could see the Pacific, writing, "Ocean in view! O! The Joy... This great Pacific Ocean which we have been so long anxious to see. And the roaring or noise made by the waves breaking on the rocky shores (as I suppose) may be heard distinctly." He was sadly mistaken. They were 32 kilometres away, and it would take more than a week in bad weather to reach Cape Disappointment on 18 November. Clark wrote that the, "...men appear much satisfied with their trip, beholding with astonishment the high waves dashing against the rocks and this immense ocean." They had reached the Pacific; their mission was accomplished. Lewis and Clark decided to take a vote on where to build their winter camp, which is believed to be the first time in recorded US history that a slave (York) and a woman (Sacagawea) were allowed to vote. The winter was tough, as endless rain dampened their spirits, but in March they set out to return, using Clark's updated map. Their journey home may have been shorter (a mere six months), but had its own dangers, including a violent encounter with Blackfeet Indians that resulted in two killings. They finally arrived in St Louis on 23 September 1806, almost two and a half years after setting off.

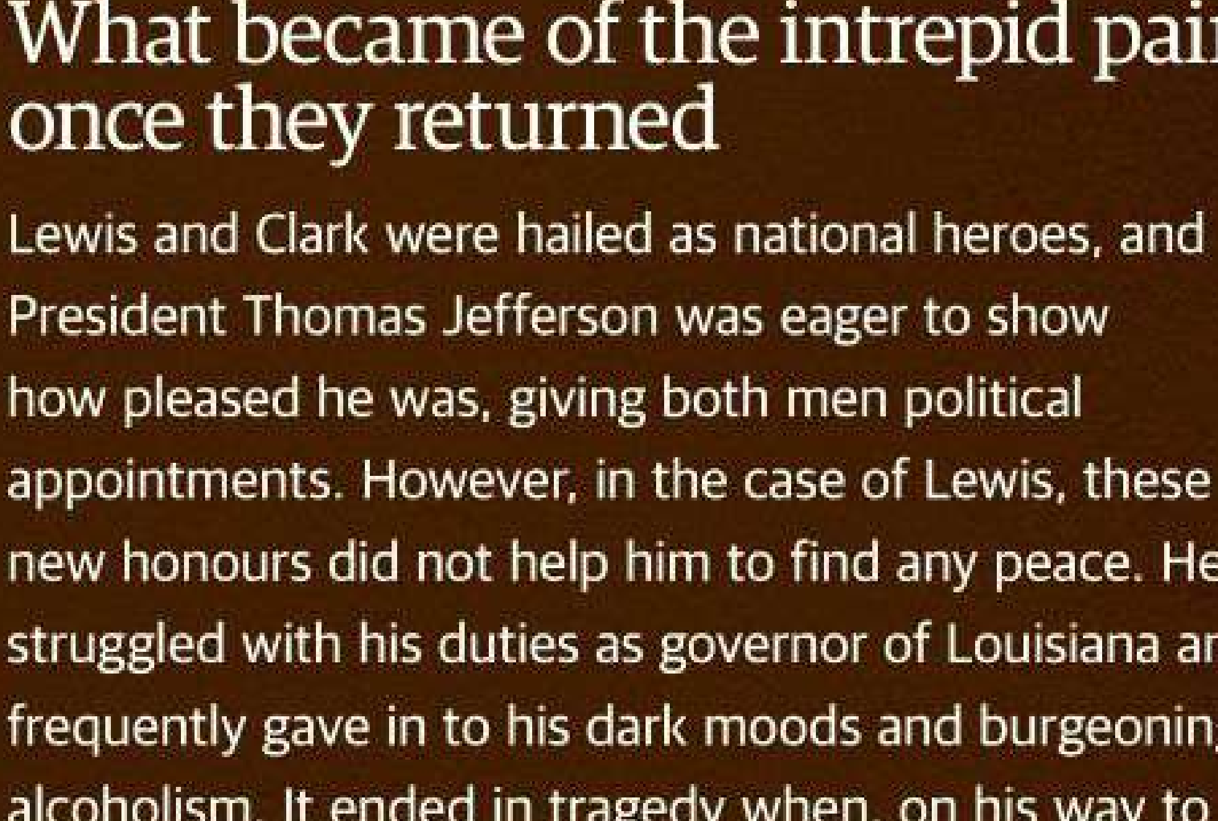
Lewis, Clark and the Corps of Discovery had gone where no white man had gone before. The discoveries they had made, from plant life to animals (grizzly bears, bison, bighorns, wolves and more) to the Native American tribes they met, helped to bring a greater understanding of the nation to Washington, and they changed the shape of the burgeoning United States of America.

Life after the voyage

What became of the intrepid pair once they returned

Lewis and Clark were hailed as national heroes, and President Thomas Jefferson was eager to show how pleased he was, giving both men political appointments. However, in the case of Lewis, these new honours did not help him to find any peace. He struggled with his duties as governor of Louisiana and frequently gave in to his dark moods and burgeoning alcoholism. It ended in tragedy when, on his way to Washington on 12 October 1809, Lewis shot himself.

Clark's life makes for much happier reading. He worked as an agent for Indian affairs and was married in 1808, before becoming the governor of the Missouri Territory for ten years. Despite his harsh words for the Lakota Sioux after their nearly violent encounter, Clark became renowned for his fair treatment of Native Americans (with some accusing him of being too sympathetic). He also cared for the child of Sacagawea after she and Toussaint left young Jean Baptiste (the baby Clark had called Pomp) in his care. He continued to raise Jean Baptiste after Sacagawea's death in 1812, and the young man would later travel to Europe and the German court.



Portraits of William Clark (left) and Meriwether Lewis (right) painted c.1807

On the trail

Track the intrepid explorers' journey across Louisiana Territory

01. Camp Wood 14 May 1804

After taking the river down from Pittsburgh and meeting Clark at Louisville, this is where they begin preparing for the expedition. Supplies are gathered, men are trained, and the importance of the voyage is impressed upon everyone. Some disciplining of the men is required before they set out.

02. Lakota Sioux 25 September 1804

Although they have experienced several peaceful encounters with Native American tribes, the Corps of Discovery has a fraught encounter with the Lakota Sioux on the river near what is now Pierre, South Dakota. Without the interference of the tribe's chief, this could have been the end for everyone.

03. Fort Mandan October 1804 - April 1805

The travellers arrive at the Mandan-Hidatsa settlement and make preparations for their winter camp, to be named Fort Mandan. Lewis and Clark arrange for many of their discoveries and journals to be sent back to St Louis, and Sacagawea joins the expedition.

04. The unknown fork 1 June 1805

The expedition reaches another crucial decision when they find an unexpected fork in the Missouri. It's a gamble to choose the right direction, but they know that they have made the correct choice when they see the Great Falls.

05. Great Falls 13 June 1805

They had been told about a great waterfall, but having been confronted with the five cascades of the Great Falls, Lewis and Clark realise that going around over ground will be a long, arduous and backbreaking process. However, there is at least plenty of game to hunt.

06. Three Forks 22 July 1805

The Three Forks of the Missouri are uncharted when the expedition reaches this crucial point. It is near the end of July and they know that if they end up taking the wrong fork, crossing the mountains will become increasingly perilous.

07. Meeting the Shoshone 17 August 1805

Sacagawea is finally reunited with her people when the extensive search for the Shoshone is over. Lewis and Clark need her to negotiate for horses, and they have an unexpected stroke of luck when Sacagawea realises that the chief is her brother.

08. Bitterroot Mountains 11-23 September 1805

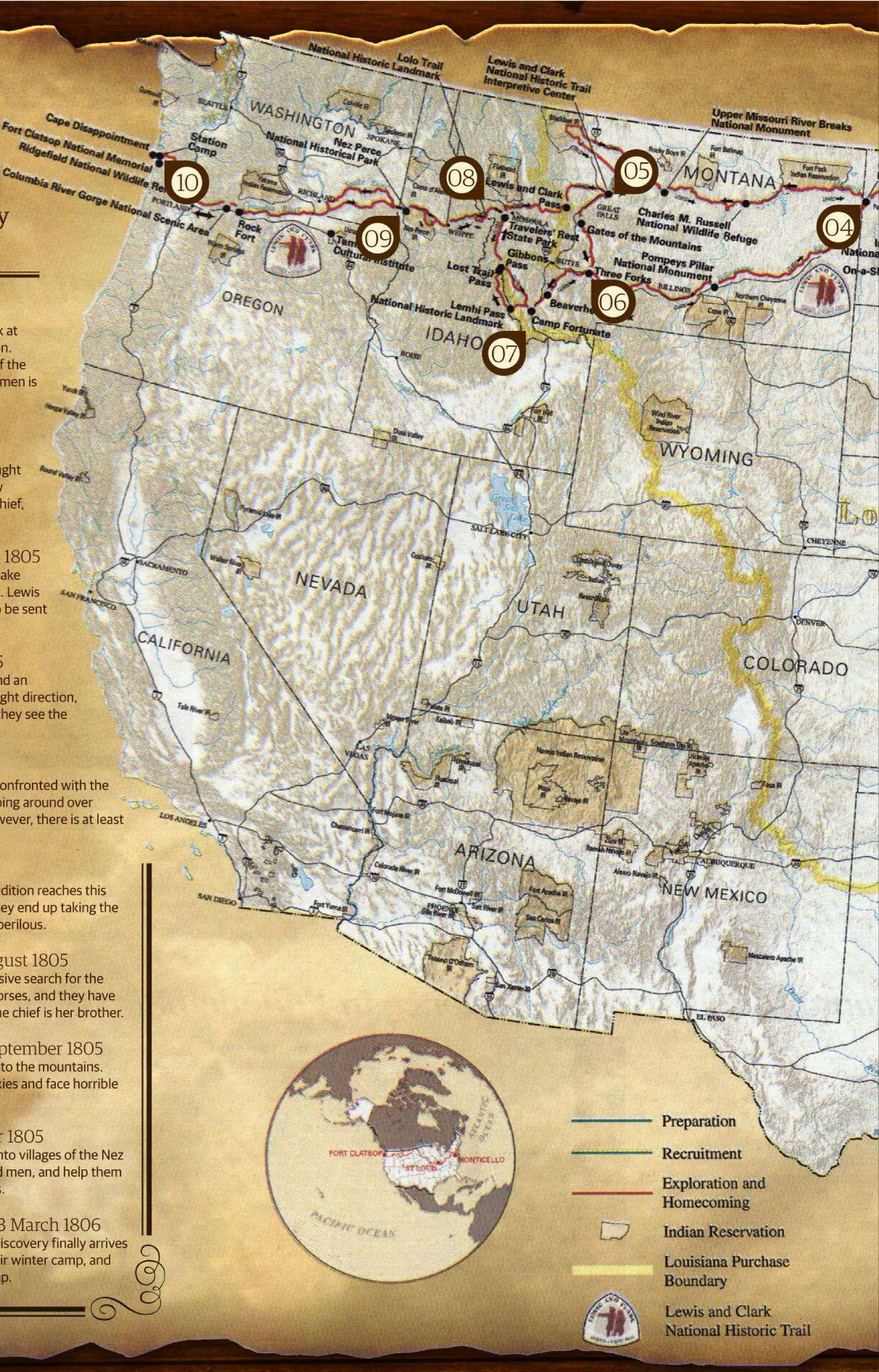
Accompanied by a Shoshone guide, the expedition sets out into the mountains. They are ill-prepared for such a long journey through the Rockies and face horrible weather conditions and the possibility of starvation.

09. Nez Perce 23 September - 7 October 1805

They finally find their way out of the mountains and straight into villages of the Nez Perce Indians. The locals take pity on the starving, bedraggled men, and help them to prepare for the final stage of their journey with new canoes.

10. Fort Clatsop 24 November 1805 - 23 March 1806

After one false alarm almost two weeks earlier, the Corps of Discovery finally arrives at the Pacific Ocean. They take a vote as to where to build their winter camp, and dream of home while Lewis works on a new and improved map.


National Historic Landmark
Lolo Trail
Lewis and Clark National Historic Trail Interpretive Center
Upper Missouri River Breaks National Monument
Cape Disappointment
Fort Clatsop National Memorial
Ridgefield National Wildlife Refuge
Columbia River Gorge National Scenic Area
Station Camp
WASHINGTON
Nez Perce National Historical Park
Lewis and Clark Pass
MONTANA
Great Falls
Charles M. Russell National Wildlife Refuge
Gates of the Mountains
Travelers' Rest State Park
Rock Fort
Tamastslikt Cultural Institute
Lost Trail Pass
Gibbons Pass
Pompeys Pillar National Monument
Three Forks
Beaverhead
Lemhi Pass National Historic Landmark
Camp Fortunate
OREGON
IDAHO
WYOMING
NEVADA
UTAH
CALIFORNIA
COLORADO
ARIZONA
NEW MEXICO
01
04
05
06
07
08
09
10
FORT CLATSOP
ST LOUIS
MONTICELLO
ATLANTIC OCEAN
PACIFIC OCEAN
Preparation
Recruitment
Exploration and Homecoming
Indian Reservation
Louisiana Purchase Boundary
Lewis and Clark National Historic Trail

Notable discoveries

Grizzly bear

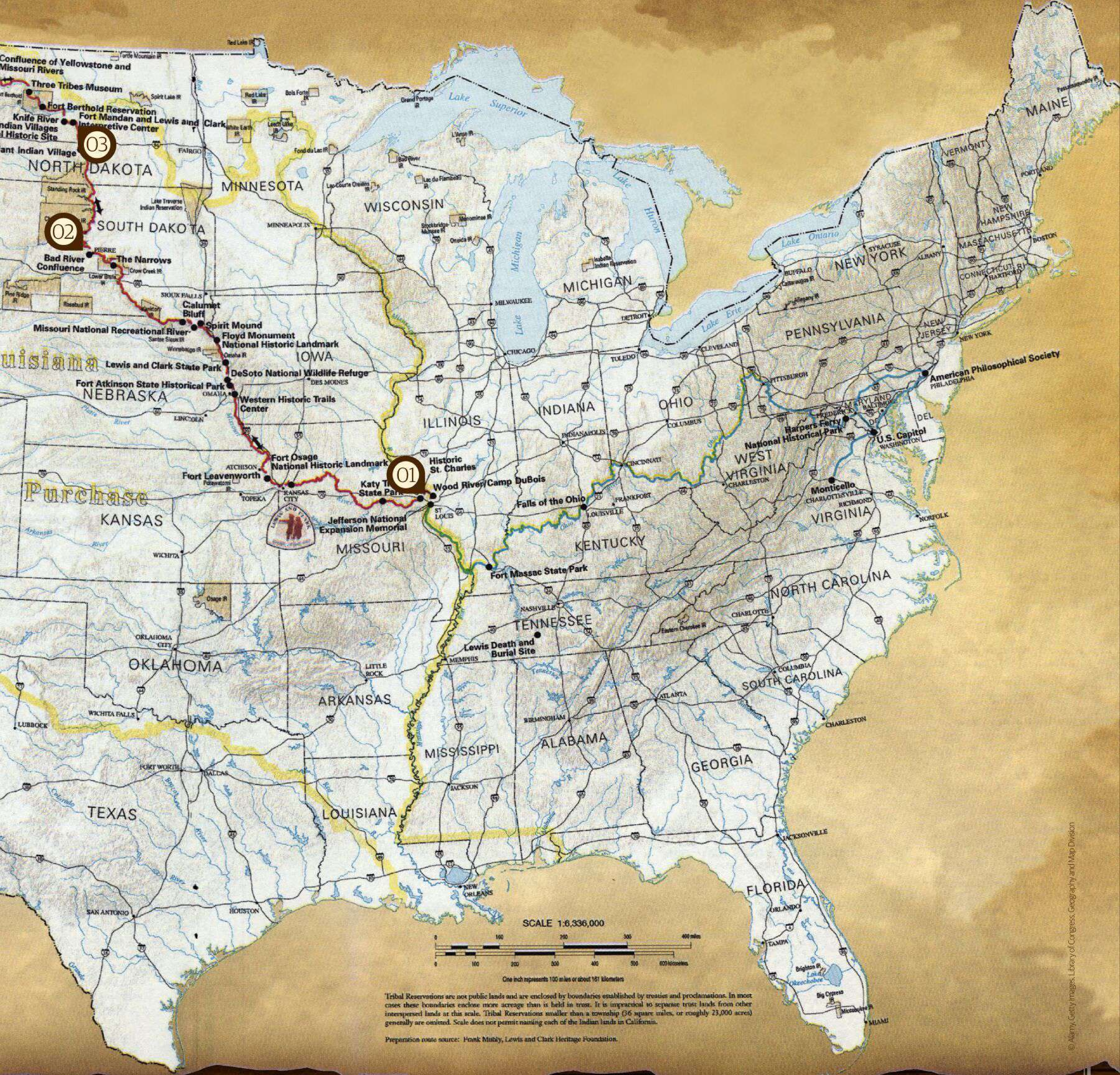
The grizzly bears were far bigger than any they had seen before. It took more than ten shots to bring down a single bear when they faced one.

Prairie dogs

Lewis and Clark found these creatures fascinating, particularly the way in which they lived in connected burrows (described as "towns").

Bison

The explorers were not prepared for the experience of seeing Bison in the wild. Lewis wrote of a friendly calf that was only scared of his dog.


Confluence of Yellowstone and Missouri Rivers
Three Tribes Museum
Fort Berthold Reservation
Knife River Indian Villages National Historic Site
Fort Mandan and Lewis and Clark Interpretive Center
03
ant Indian Village
NORTH DAKOTA
02
SOUTH DAKOTA
Bad River Confluence
The Narrows
Calumet Bluff
Spirit Mound
Missouri National Recreational River
Floyd Monument National Historic Landmark
Lewis and Clark State Park
DeSoto National Wildlife Refuge
Fort Atkinson State Historical Park
Western Historic Trails Center
NEBRASKA
IOWA
Fort Osage National Historic Landmark
Fort Leavenworth
Katy Trail State Park
01
Historic St. Charles
Wood River/Camp DuBois
Jefferson National Expansion Memorial
Falls of the Ohio
Fort Massac State Park
Lewis Death and Burial Site
Harpers Ferry National Historical Park
U.S. Capitol
American Philosophical Society
Monticello
uisiana Purchase
KANSAS
MISSOURI
MINNESOTA
WISCONSIN
MICHIGAN
ILLINOIS
INDIANA
OHIO
KENTUCKY
TENNESSEE
WEST VIRGINIA
VIRGINIA
NORTH CAROLINA
SOUTH CAROLINA
GEORGIA
ALABAMA
MISSISSIPPI
ARKANSAS
OKLAHOMA
TEXAS
LOUISIANA
FLORIDA
PENNSYLVANIA
NEW YORK
NEW JERSEY
MARYLAND
DEL
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
CONNECTICUT
RI
MAINE
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
SCALE 1:6,336,000
0 100 200 300 400 miles
0 100 200 300 400 500 600 kilometers
One inch represents 100 miles or about 161 kilometers

Tribal Reservations are not public lands and are enclosed by boundaries established by treaties and proclamations. In most cases these boundaries enclose more acreage than is held in trust. It is impractical to separate trust lands from other interspersed lands at this scale. Tribal Reservations smaller than a township (36 square miles, or roughly 23,000 acres) generally are omitted. Scale does not permit naming each of the Indian lands in California.

Preparation route source: Frank Muhly, Lewis and Clark Heritage Foundation.

© Alamy, Getty Images, Library of Congress, Geography and Map Division

Coyote

Described as "a prairie wolf", Lewis and Clark heard these creatures howling in the night. They were familiar to European traders, but unknown to the men.

Silver sagebrush

First seen in October 1804, the sagebrush, now known as Artemisia cana, was described as an "aromatic herb", and it spread through great swathes of the West.

Indian tobacco

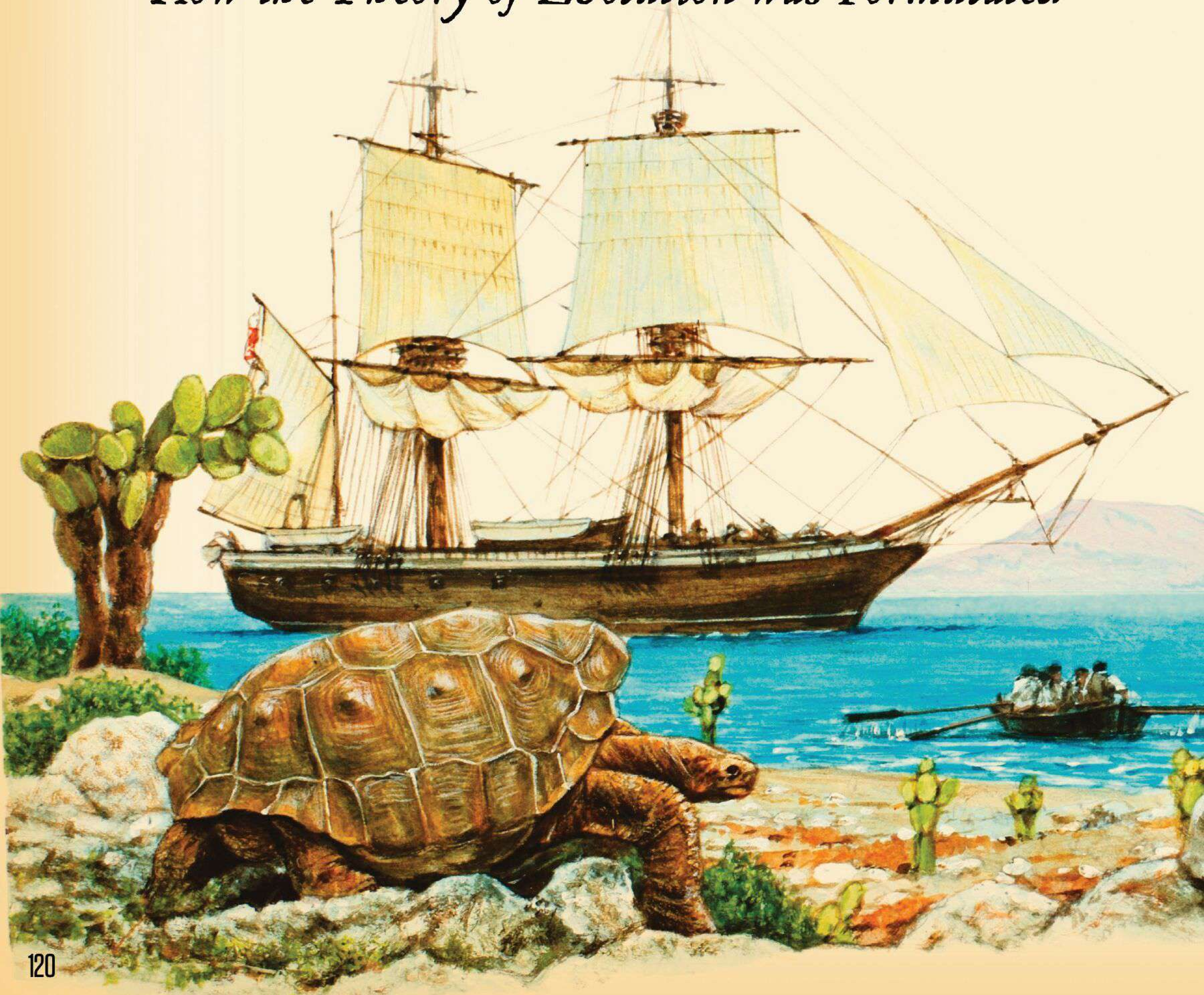
As a tobacco grower, Lewis took particular interest in the two species he encountered on the trip, taking notes on how the Arikaras tribe grew and harvested their crops.

Douglas firs

Towards the end of the voyage, they saw a variety of fir trees, with Lewis doing his best to describe six in his journal, including the Douglas fir.

The Voyage of the Beagle

How the Theory of Evolution was Formulated



It's difficult to match our popular image of Charles Darwin, a quiet thinker hiding from the controversy he had caused, with the young adventurer he became as the HMS Beagle steered the waters of South America and beyond. A more dramatic contrast still is with the state that he was in just days into the Beagle's five-year journey. Confined to his bed by violent seasickness as the ship was hurled around the waves of the Bay of Biscay, he was immobilised to such an extent that his crewmates, and even Darwin himself, thought that he would leave the ship at the first opportunity.

The naturalist would soon find his sea legs, however, and the discoveries that he made during that voyage would set him on the path to shattering many long-held beliefs of the scientific elite. His journey would be the seed from which his theory of evolution and natural selection grew; a theory that would change the way we saw our place in the world forever.

Darwin's presence on the Beagle and his emergence as a naturalist have their roots in happy accidents, the goodwill of friends, and Darwin's own amiable nature and desire to find his own place in the world. The ship was by no means chartered for Darwin's convenience. In the years following the Napoleonic wars, the British admiralty wanted no stone left unturned and, in an age where Britain was pushing the limits of its colonial expansion, the ship was, among other things, to be the first chartered exploration of the area using marine chronometers under the command of the hot-tempered Captain Fitzroy.

Fitzroy had a good reason for wanting a companion on board for such a long and arduous

> "It became clear that Darwin was officially the ship's naturalist,setting him in opposition to the ship's surgeon, Robert McCormick"

How Darwin became the Beagle's naturalist

In the years before the voyage of the Beagle, the young Darwin was something of an aimless disappointment to his father, who had invested a great deal of money in his son. His scientific curiosity clashed with his interest in becoming a clergyman, so much so that he left Edinburgh University where he was studying medicine to study Divinity at Cambridge.

Although he might have been unsure about what exactly he wanted to do with his life, Darwin had a strong moral code that helped him to become a sensitive observer of human nature. His grandfather Josiah Wedgwood was a famous campaigner for the abolition of slavery and Darwin passionately believed in his family's work. He wrote often in his diaries from the Beagle about his shock and dismay at the treatment of the slaves and indentured workers he encountered in South America.

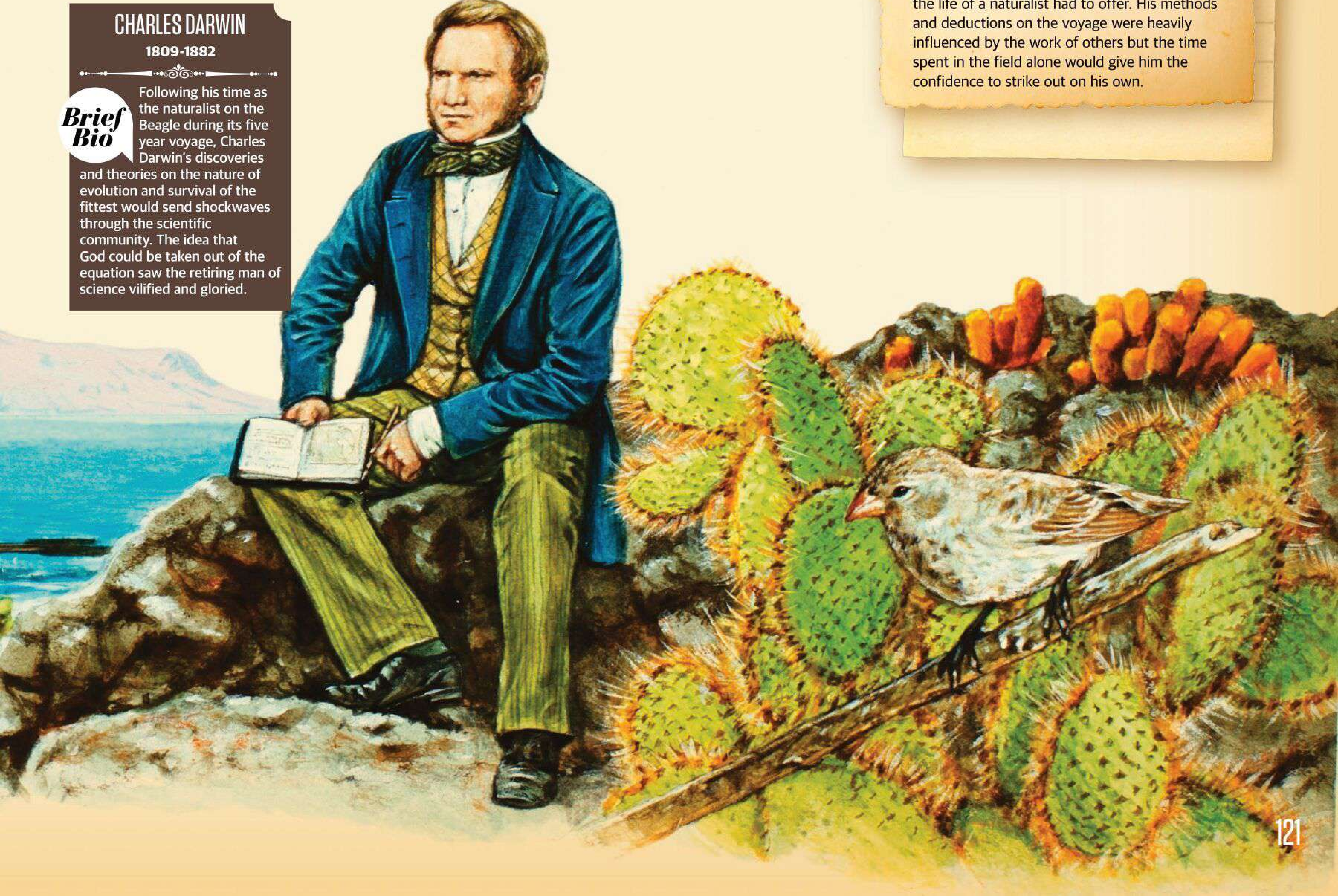
Darwin was offered the position on the Beagle after two men, Henyns and Jenslow, had decided not to take it. During his time at Cambridge he had made a name for himself as a good-natured and inquisitive fellow, and the two men decided to offer it to him. At this point Darwin was at a critical juncture in his life and he saw the proposed two year voyage as a chance prove himself and to find out what the life of a naturalist had to offer. His methods and deductions on the voyage were heavily influenced by the work of others but the time spent in the field alone would give him the confidence to strike out on his own.

CHARLES DARWIN

1809-1882

Brief Bio

Following his time as the naturalist on the Beagle during its five year voyage, Charles Darwin's discoveries and theories on the nature of evolution and survival of the fittest would send shockwaves through the scientific community. The idea that God could be taken out of the equation saw the retiring man of science vilified and gloried.



voyage. His predecessor on the ship, Captain Stokes, had put a bullet in his head after two years on board and, with a history of mental illness in the family, Fitzroy feared that he might be prone to the same dark impulses. He wasn't concerned so much with finding a brilliant scientist as someone who he could get along with, and the good-natured Darwin passed his compatibility test.

The two men would have their violent arguments (Darwin was appalled by Fitzroy's acceptance of slavery) and Fitzroy's fits of rage were a real concern as the Beagle was not a large vessel, measuring just 27 metres (90 feet) long. The captain warned Darwin that there would not be much in the way of personal space and the naturalist shared a room with two other men, moving drawers every night to fit into his bed. However, despite his initial struggles in bonding with the crew (Darwin realised that his schooling was not applicable to life on board a naval vessel and found himself the butt of several practical jokes), it was a more routine fact of life at sea that threatened to scupper Darwin's mission at the very first hurdle as his seasickness was so brutal.

By the time the Beagle reached St Jago (now Santiago) in Cape Verde Darwin had found, if not his sea legs, then at least his scientific curiosity. He was fully aware of what a huge opportunity the trip was and he was determined to make the most of it. There he saw tropical vegetation in its natural habitat for the first time and had his first experience with an octopus - he believed, incorrectly, that his discovery that they could glow in the dark was a new one. It was here that he began his exhaustive process of taking and cataloguing samples which, in addition to his diaries, would be essential in developing his theories on his return to England.

His collections were so extensive that it became clear that he was officially the ship's naturalist, setting him in opposition to the ship's surgeon Robert McCormick,

27th December, 1831

Plymouth, England

Darwin agrees to take the position of ship's captain's assistant but has to wait three months before the Beagle sets sail. The first week of the voyage would prove to be trying as he was confined to his bed with seasickness.

16th January, 1832

St Jago

Darwin overcomes his seasickness at the Cape Verde islands and realises what a fantastic opportunity the Beagle's voyage represented. His diary is filled with excitement as he sees many exotic vegetation and animals for the first time.

29th February, 1832

Salvador, Brazil

The Beagle makes anchor in South America for the first time and Darwin sets his eyes on the rainforest. The sheer vastness of his mission was dawning upon him as he loaded up the Beagle with samples to be sent back to England.

3rd August, 1833

Rio Negro, Argentina

Darwin spent some of his happiest days exploring the wildlife of Argentina. At Rio Negro he rode with the gauchos, hunting for dinner and avoiding rebel forces. He was impressed by General de Rosas, who gave permission for Darwin's passage.

January-February 1835

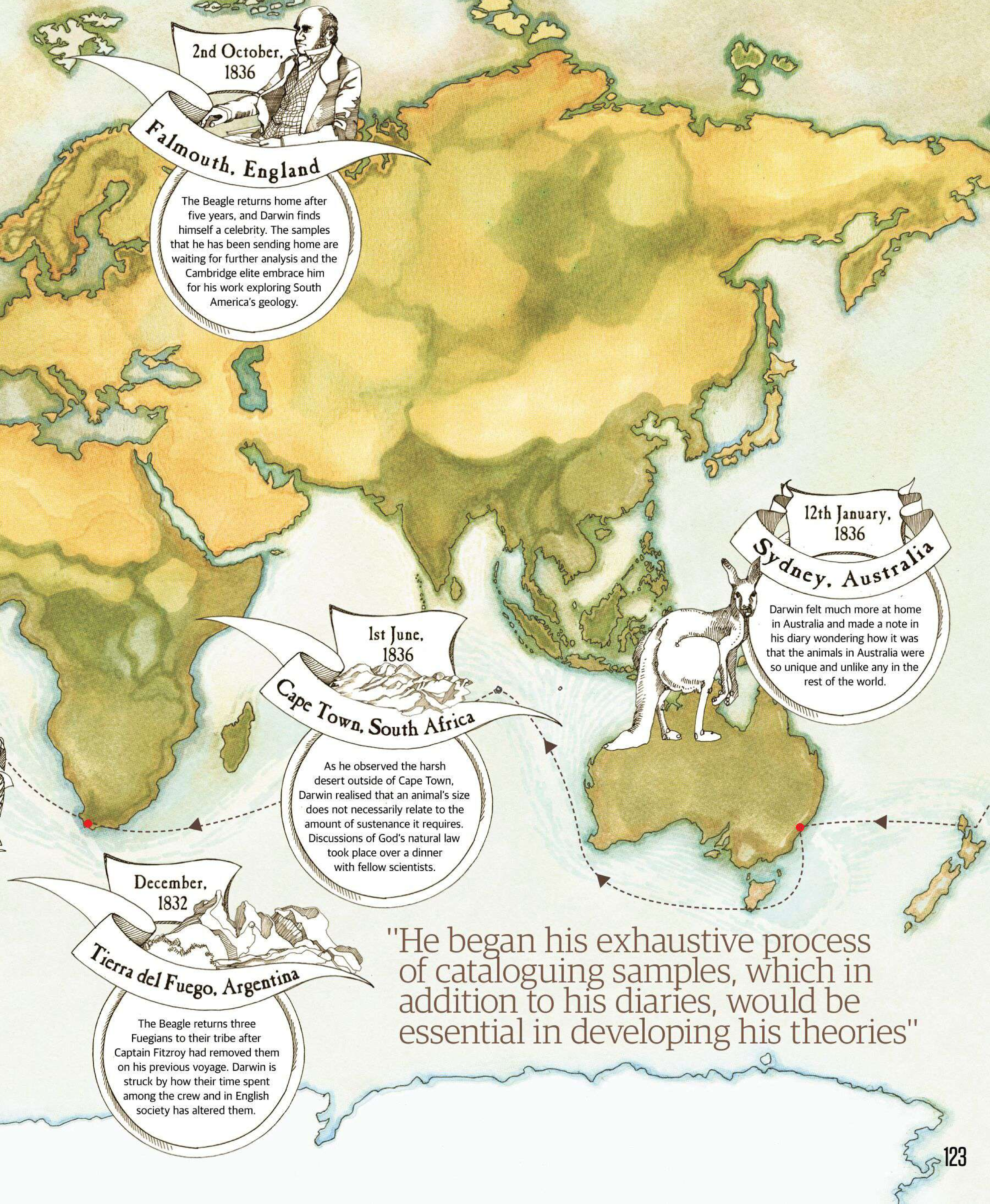
Chiloé, Chile

Darwin's ideas expanding on Lyell's theory of an Earth in a constant state of movement were confirmed when he witnessed the massive eruption of Mount Osomo. It was a tremendous and moving sight.

15th September - 20th October 1835

Galapagos Islands

Darwin was most fascinated by the enormous tortoises and iguanas that populated the islands. He wouldn't realise until later when he returned to England that the different species he saw were actually specific to each particular island.



2nd October, 1836

Falmouth, England

The Beagle returns home after five years, and Darwin finds himself a celebrity. The samples that he has been sending home are waiting for further analysis and the Cambridge elite embrace him for his work exploring South America's geology.

12th January, 1836

Sydney, Australia

Darwin felt much more at home in Australia and made a note in his diary wondering how it was that the animals in Australia were so unique and unlike any in the rest of the world.

1st June, 1836

Cape Town, South Africa

As he observed the harsh desert outside of Cape Town, Darwin realised that an animal's size does not necessarily relate to the amount of sustenance it requires. Discussions of God's natural law took place over a dinner with fellow scientists.

December, 1832

Tierra del Fuego, Argentina

The Beagle returns three Fuegians to their tribe after Captain Fitzroy had removed them on his previous voyage. Darwin is struck by how their time spent among the crew and in English society has altered them.

> "He began his exhaustive process of cataloguing samples, which in addition to his diaries, would be essential in developing his theories"

> "Darwin's sense of discovery gave him the confidence to make some bold claims and suggest challenging ideas"

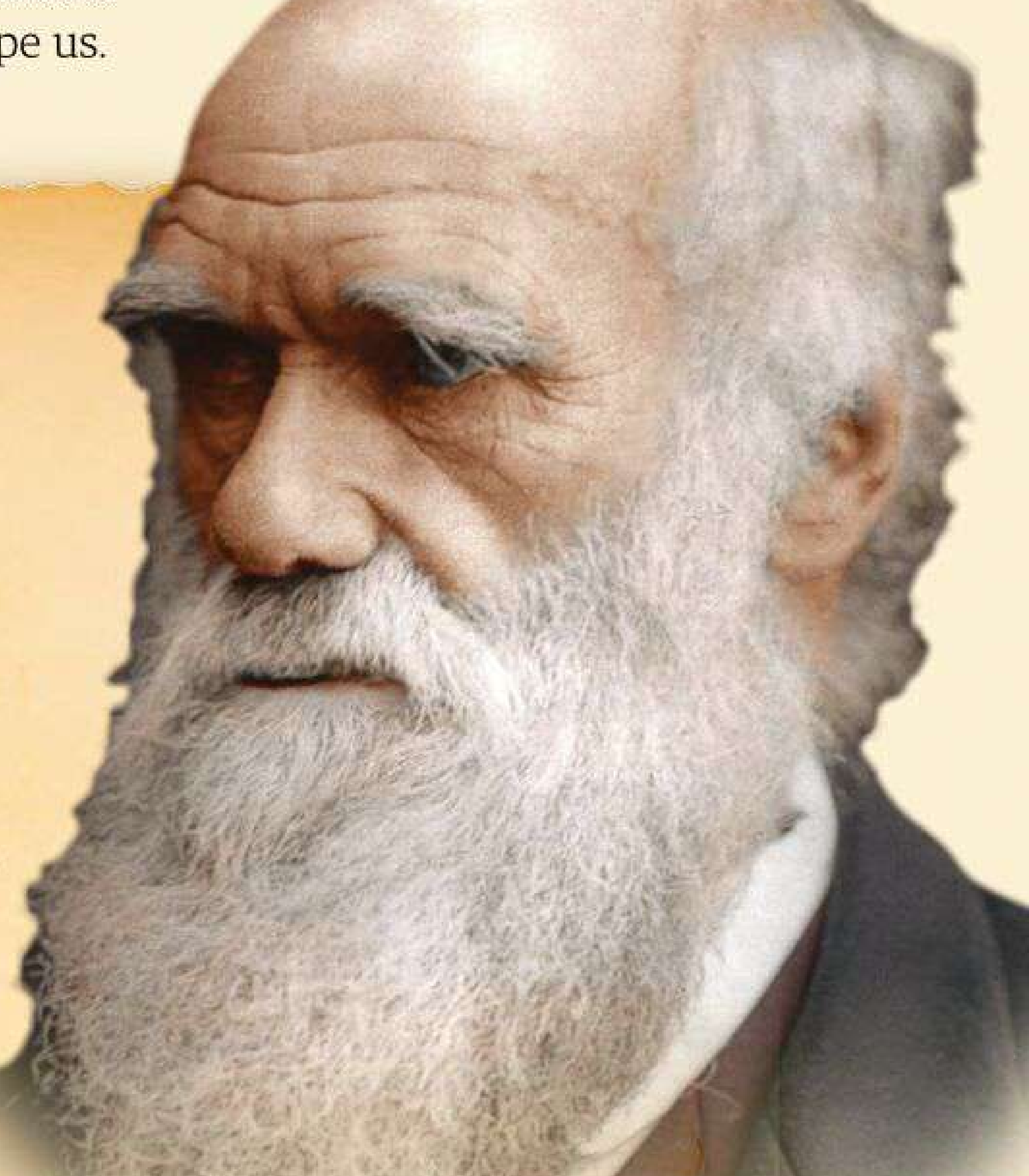
who was under the belief that he held the title. Consequently, McCormick left the Beagle at Rio, Brazil. It's worth noting that many of the men on the Beagle shared Darwin's interest in natural history and assisted him in his excavations, giving up the possibility to profit from their individual findings on their return. The young scientist's enthusiasm was contagious.

By the time McCormick left, Darwin was in his element; so much so that he quickly got over the news that his former sweetheart Fanny Owen was now engaged to be married. The rainforest was a goldmine and this sense of discovery gave him the confidence to make some bold claims and suggest some challenging ideas. In Argentina Darwin was awed by the dashing General Rosas and his gauchos, fighting a campaign against roving bands of rebel Indians. The General's men accompanied Darwin on his expeditions into the wild and the naturalist, who referred to himself as 'a great wanderer', got a taste of real danger as they avoided bands of marauders. The raised heart rate was worth it, as his findings demonstrated no sudden debacle' of extinction could have occurred. The fossils he attributed to the extinct giant sloth Megatherium looked strangely like an armadillo, and it was only when he returned to London that he understood he had found a creature at some point in between. This coincided with his efforts exploring the geology of the region, building on the work of Charles Lyell, who controversially believed that the earth was in a constant state of movement.

It wasn't all work, as Darwin managed to find time to join the gauchos in hunting ostriches for sport. In fact, he enjoyed hunting so much that he only realised that he had found a rare species of rhea that he was looking for while he was in the middle of eating it (the uncooked parts were sent back to England). He also continued to show his usefulness to the crew when he walked 20 miles ahead of his captain to bring back water to the stranded group on an attempt to reach the Andes, and shot a 170-pound guanaco for the group's 1833 Christmas lunch. Examination would come later; he was an adventurer on the trip of a lifetime.

It wasn't just geology or natural history that prompted Darwin to ponder the question of evolution and of nature vs nurture. The Beagle carried three Fuegians (indigenous inhabitants of Tierra del Fuego) that Fitzroy had taken a previous visit in 1830 to be examined by a phrenologist and shown as curiosities. Named Jemmy Button, York Minster and Fuegia Basket by the crew, the three were to be returned home with a priest named Richard Matthews, who would establish a mission on their island. During the course of their time on the Beagle and in England, all three had substantially adjusted their behaviour and appearance and it was unclear exactly how well they would be received by the island's inhabitants.

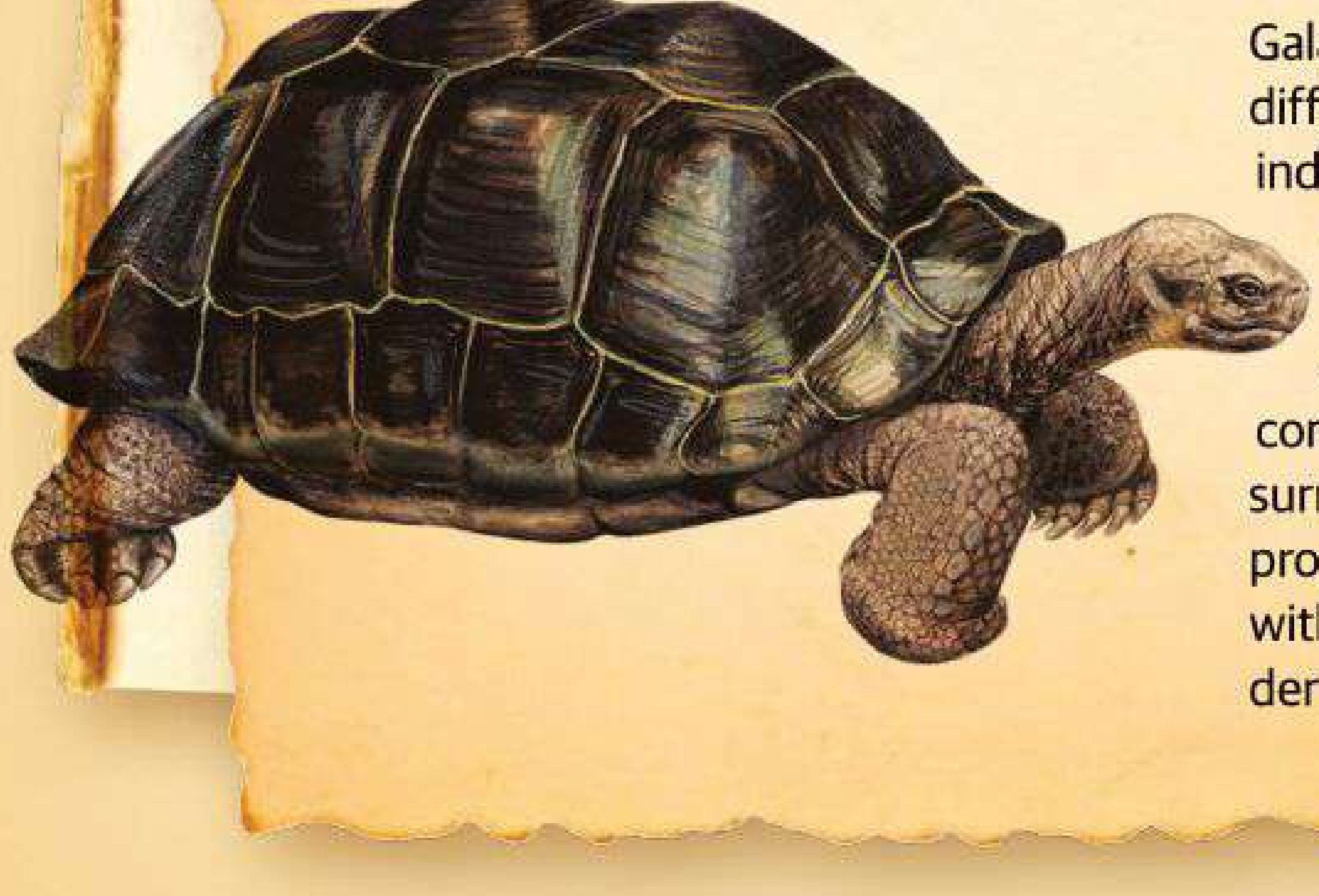
As the Beagle drew closer to their island, Darwin observed the tribesmen who watched them pass. He wrote about the men who lit torches and ran alongside the coastline, remarking on their savagery. When the crew of the Beagle reintroduced the three Fuegians to their fellow islanders, Darwin was instantly struck by how much their time away had set them apart from their tribesmen. York Minster exhibited scorn for his fellows, while Jemmy Button was notably uncomfortable. The atmosphere was not a pleasant one, but Fitzroy decided that Matthews' mission should go ahead and left him with sufficient supplies before sailing away. When the Beagle returned some months later they found that Jemmy Button was struggling to reintegrate, while Matthews reappeared when he ran screaming for the boat. His mission was abandoned. Darwin did not believe that the British sailors and the Fuegian tribesmen belonged to different species, but this incident helped to show him the real extent to which our environments can shape us.

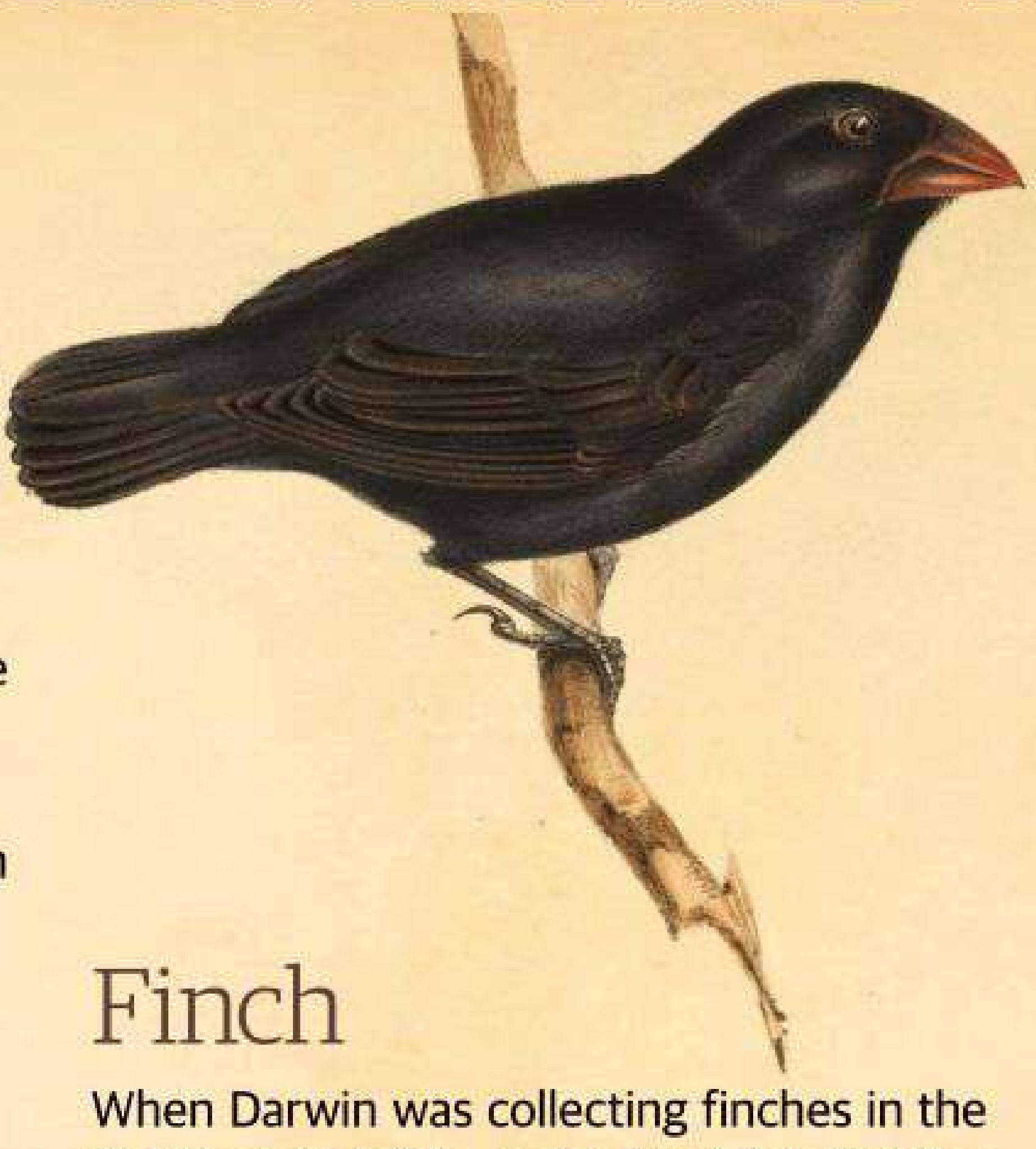


THE ANIMALS THAT INSPIRED DARWIN

Giant tortoise

Darwin was too caught up in observing the tortoises' behaviour and collecting samples (as well as seeing what they tasted like) to realise that the different animals he was observing were specific to each island. The giant lumbering creatures reminded Darwin of a prehistoric land, and he marvelled at their disinterest in the human visitors. It was Nicholas Lawson, the acting governor of the Galapagos, who told Darwin that the tortoises of each island had their own patterned shells.



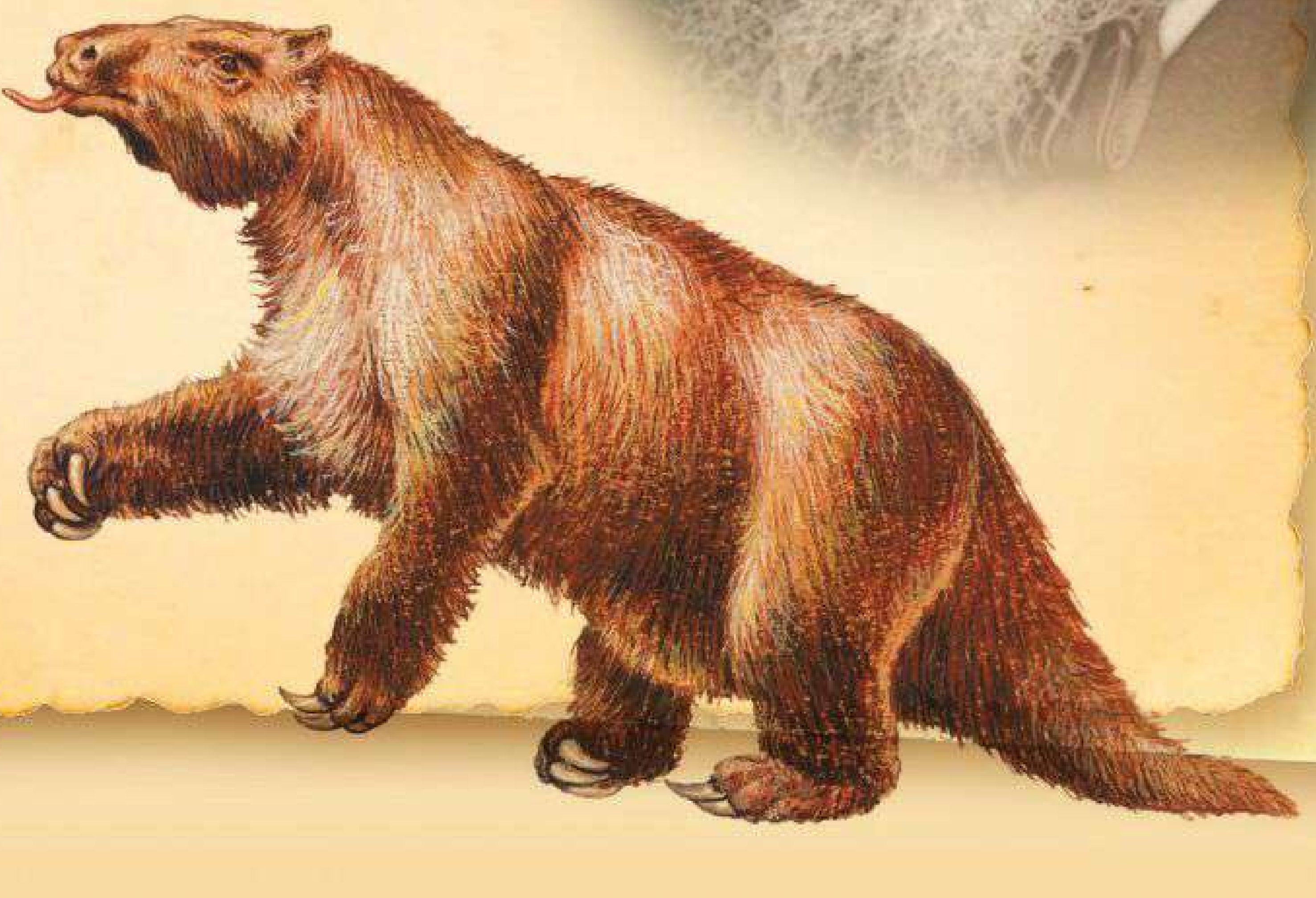


Finch

When Darwin was collecting finches in the Galapagos Islands, he had no idea that the different species he was finding were from individual islands. Observing the small differences in his samples, he began to realise that it was possible that the different species must have shared one common ancestor before adapting to their surroundings. The Galapagos finches would prompt Darwin's theory of natural selection, with more than 13 different species being derived from just one breed.

Megatherium

Darwin found many skeletons of what he assumed belonged to the Megatherium species (a huge long-extinct sloth-like creature) during his travels in South America but he noticed several important differences. For example, an early find had a shell not unlike an armadillo's. The idea that the species had been rendered extinct by a single catastrophic event became increasingly implausible, and Darwin began to come around to the idea of the 'law of succession of types'.



'Dragon Hill' in Santa Cruz, the Galapagos Islands

A land iguana from the Galapagos Islands

"Darwin felt that he was reaching out and touching the prehistoric with his own hands"

The Beagle sailed on for Chile where the expedition was nearly done for. Darwin enjoyed a break from his work in Santiago with some expatriate Britons but became violently ill on the return trip to Valparaiso due to 'sour wine' and Fitzroy tumbled into depression when the admiralty refused to pay for a second boat he had bought out of his own pocket. It looked as though the Beagle might be heading home, but the crew calmed Fitzroy and the astonishing sight of an erupting volcano made it clear their exploration must continue. The beginning of 1835 saw a series of devastating earthquakes and volcanic eruptions that allowed Darwin to witness the earth's movements first hand. He saw just how much the landscape could change in one day and the devastation that can happen in an instant.

Having observed the changed sea level at the beach in Concepción Harbour, Darwin theorised that forces under the Earth's crust would lead to earthquakes if they erupted under the surface with no means of escape. He improved on Lyell's notion by suggesting that every volcanic event was interconnected, which led to him making somewhat doom-laden predictions about what would happen if such a powerful eruption took place in England.

The Beagle then sailed on to the Galapagos Islands, the site of Darwin's most famous discovery, although he didn't realise it at the time. Following the eruptions, Darwin was interested in the volcanic landscape of the region and did not stop to think that the different species of finch he was cataloguing were specific to their own islands. He was fascinated by the tortoises and iguanas, which he saw as resembling 'the inhabitants of some other planet'. Here he was reaching out and touching the prehistoric with his own hands.

The final stops on the Beagle's voyage were less concerned with nature than with humanity as Darwin and Fitzroy visited missions, although he was stunned by the beauty of the coral reefs off the coast of Australia. His diary entries are filled with homesickness, and it was with great relief that Darwin returned to England in October 1836. It had been a tremendous adventure, but Darwin's journey had only just begun – his view of the world had been changed. He did not yet realise that he would change the view the world had of itself.

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The Franklin Expedition Tragedy

The British obsession with finding a route over the top of Canada to the Pacific Ocean led Sir John Franklin to infamy – for all the wrong reasons

There are few places in the world which can match the utter desolation and sense of emptiness like the archipelago found above the North American continent. But from nothing, something must come.

Those in the British Admiralty long believed it possible to sail from the Atlantic to the Pacific by going over the top of Canada and Alaska. Ships would save time, but also avoid the long way around via Cape of Good Hope or having to take on Cape Horn, whose treacherous waters have wrecked many ships. Today, with climate change, ships can use the Northwest Passage. Back then, it was deemed one of exploration's ultimate challenges.

The Northwest Passage, as it became known, was an Admiralty obsession and though much of the area had been mapped, there were inlets, channels and sounds still unknown. The main instigator of the 1845 expedition was Sir John Barrow, the eighty-year-old Second Secretary, who pined for another naval jaunt into Arctic waters. In an 1844 letter to Lord Haddington, First Lord of the Admiralty, Barrow opined: "The discovery, or rather the completion of the discovery, of a passage … ought not to be abandoned, after so much has been done, and so little now remains to be done."

What gnawed at their self-respect and sense of glory was the missing piece of the puzzle, or rather, the grand prize: sailing from one side of the world to the other. Having experience of the region, Sir John Franklin, who earned the nickname 'The Man Who Ate His Boots', after previous Arctic hardships forced him to literally eat the leather from a pair of boots, was selected after several candidates were either rejected or declined the invitation. Franklin was among the first to know about Barrow's new proposal, after contact with Lord Haddington.

Franklin proposed to tackle the passage via Cape Walker and Bank's Island. If that proved impossible, he had the idea of heading north through Wellington Channel and to try for a route north of the Barrow Strait. Prime Minister Robert Peel gave the go-ahead for the venture and the Royal Society backed up the Admiralty with their appreciation that the mission may yield further scientific discoveries and observations. A well-liked and deeply respected Arctic explorer, though he hadn't been there for seventeen years, Franklin, aged 59, was given his orders on 5 May 1845, and he set off captaining the expedition, leading two ships: HMS Erebus and HMS Terror.

The boats were well prepared for their adventure. Both refitted war vessels with ten-inch belts of

Defining moment

The last sighting

While awaiting better conditions to cross to Lancaster Sound, the ships met two American whalers, the last confirmed sighting of Erebus and Terror. Captain Dannett of the Enterprise invited Franklin aboard. He recorded in his log: "Both ships' crews are well, and in remarkable spirits, expecting to finish the operation in good time."

July/August 1845

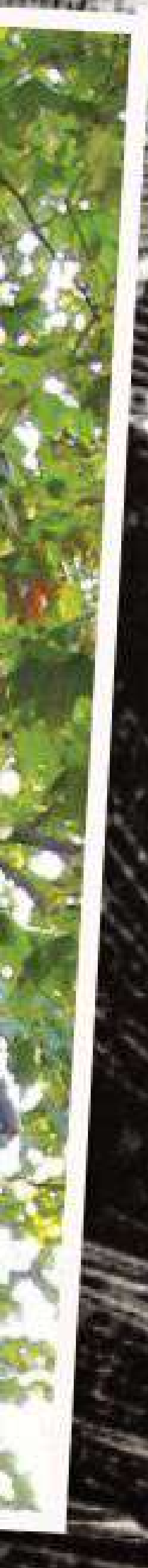
SIR JOHN FRANKLIN

1786-1845

Brief Bio

John Franklin distinguished himself in the British Navy and his experiences in the Arctic region began in 1819. In 1836, he was made Lieutenant-Governor of Van Diemen's Land – now Tasmania – but removed from the post in 1843. In 1845, he was selected to lead the latest expedition to find a definitive route through the Northwest Passage.

The John Franklin statue was erected in Waterloo Place, London in 1866



Top five facts: Sir John Franklin

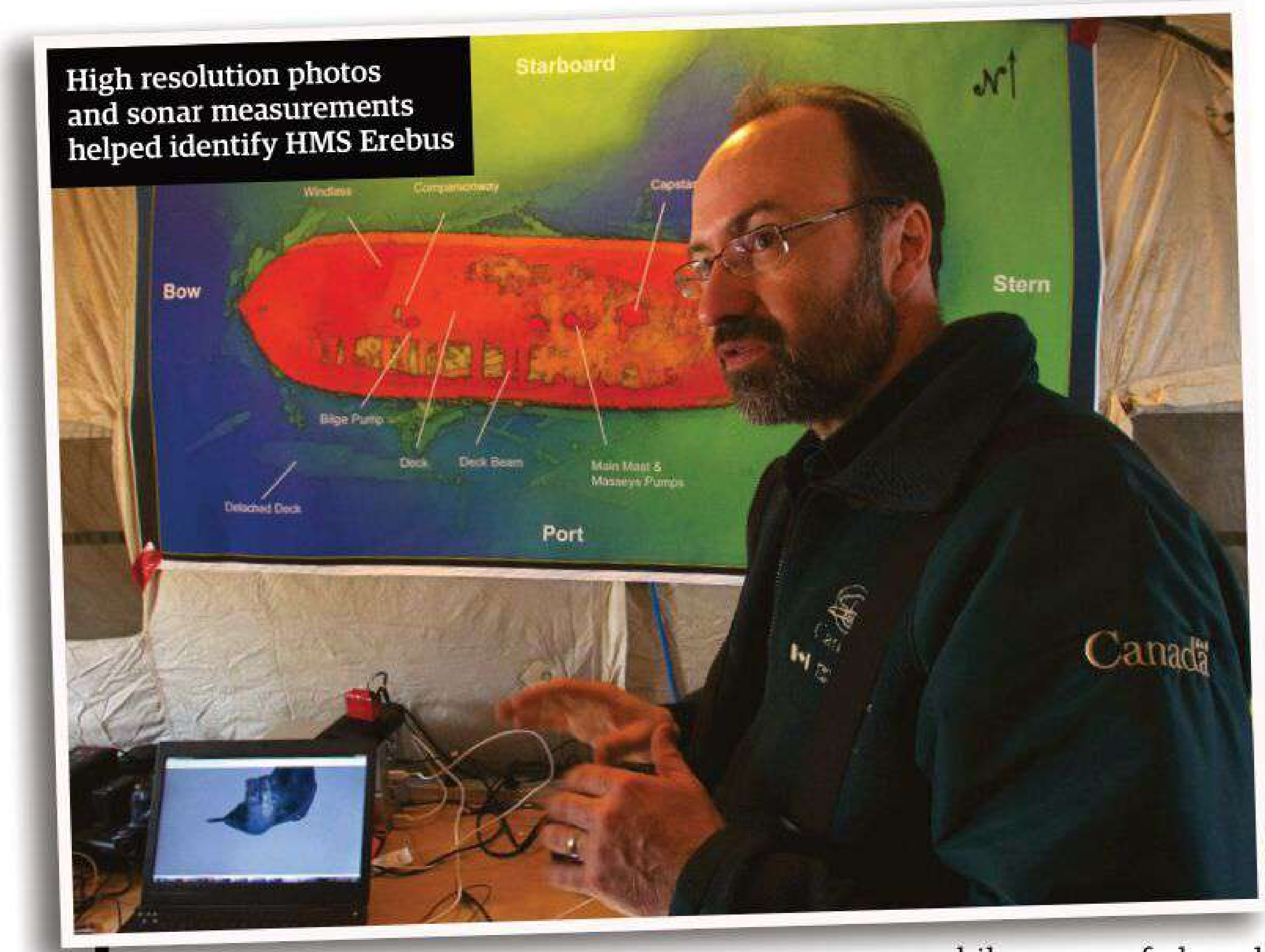
1 Young starter
Franklin, barely out of his teens, fought in the Battle of Trafalgar, aboard the 74-gun HMS Bellerophon.

2 Drastic measures
Heading an Arctic expedition beginning in 1819, his men faced starvation and ate lichen and their own boots.

3 Nickname
Due to the Coppermine River expedition fiasco, Franklin became known in the UK as the 'Man Who Ate His Boots'.

4 A new expedition
In 1825, Franklin heads off again to the north, this time tasked with finding the mouth of the Mackenzie River.

5 Knighthood
On 29 April 1829, he was knighted by King George IV and married Jane Griffin, his second wife.



High resolution photos and sonar measurements helped identify HMS Erebus

timber, sheet iron on its bows, to cut through sea ice and to take the strain of being trapped in it, and beams protecting the hull. They also benefitted from tubular boilers and steam apparatus, which provided hot water and heating. A 25-horsepower locomotive engine was fitted into the Erebus, purchased from the London and Greenwich Railway company and Terror was fitted with a 20-horsepower engine.

Erebus and Terror boasted a library of 2,900 books and journals between them, 200 gallons of wine, 9,450 kilograms of chocolate, 4,22 kg of lemon juice (to ward off scurvy) and 7,088 pounds of tobacco. The ships were also stocked with the latest technological advancement in food preservation: tinned goods. But did these preserved meats, fruits and other foods end up contributing to their deaths? Lead content in the solder may have contaminated the grub. When remains were tested, during autopsies and forensic digs in the 1980s, found astronomically high levels of lead, which suggests slow poisoning. But it equally could have derived from lead in the water systems.

Having made stops at the Whale Fish Islands in Baffin Bay, Greenland, the ships set off across Lancaster Sound in search of the passage which proffered fortune and glory to the British Navy and the nation's morale. Franklin's expedition was a major source of fascination for citizens in all social strata. More so, when they went missing and confirmation of their demise took almost a decade to fully confirm.

Things began well, Franklin and his team full of confidence. No amount of sea ice was going to stop the British from attaining their goal. They sailed west through Lancaster Sound, avoiding the icebergs and sea ice, where they came up against the impassable ice barrier at Barrow Strait. Exploring the Wellington Channel and finding more ice barriers, they made harbour off Devon Island's south coast, at the small Beechey Island.

Having to contend with 24-hr darkness and sheer boredom must have been difficult. At this point in time the crew, many of whom had no experience of Arctic conditions or exploration, were buoyed by a sense of purpose. Franklin, too, was a formal sort but equally affable. There were worse captains and sadistic disciplinarians to sail with. Still, passing the winter at Beechey Island must have been bleak and exceedingly dull. The first hints of disaster reared its head at Beechey Island, when on New Year's Day 1846, men began to perish.

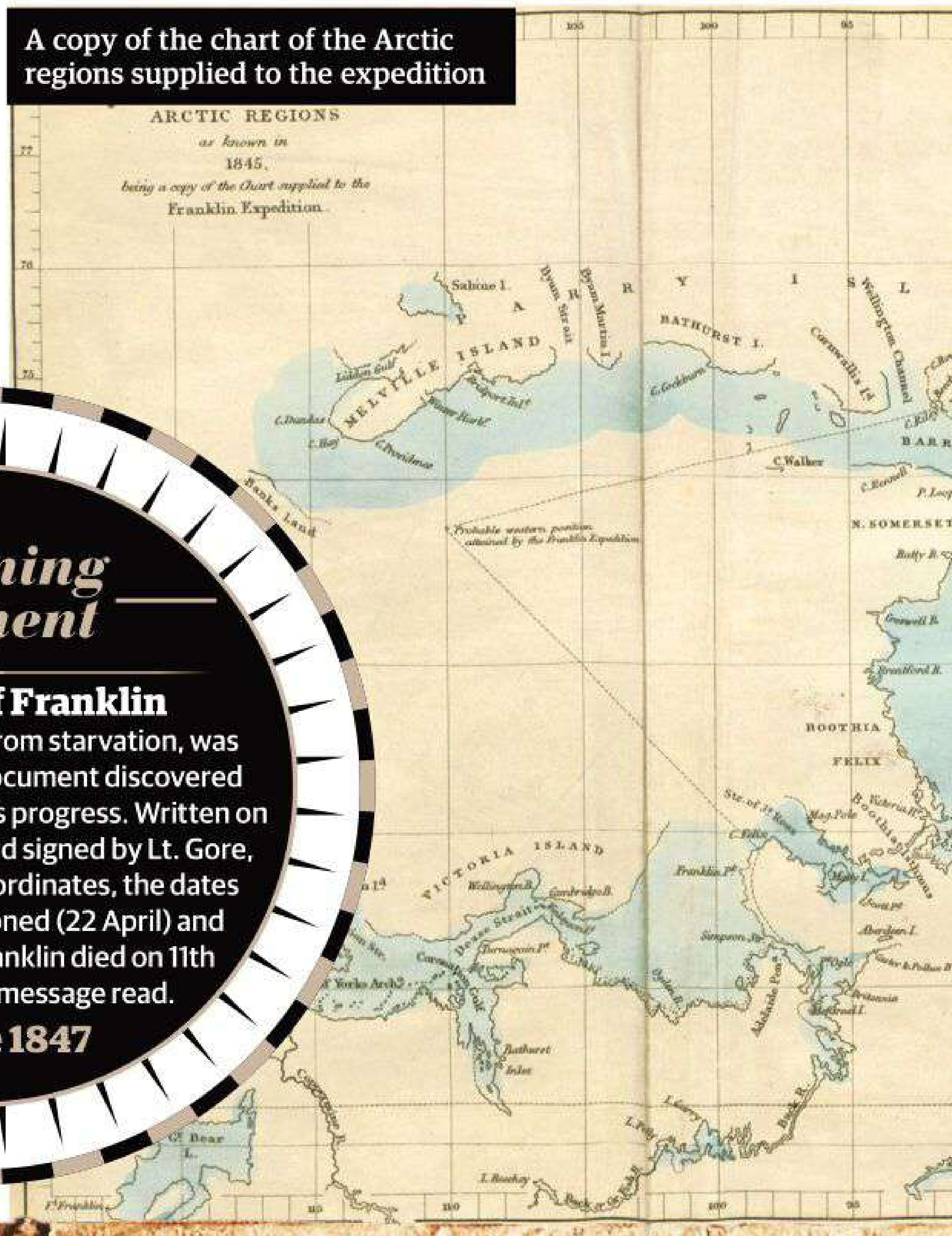
The graves at Beechey Island would be exhumed properly in 1984. The bodies of John Torrington, William Braine and John Hartnell underwent a thorough autopsy, their remains remarkably preserved by the permafrost and ice. The graves and tombstones were well constructed and proper rites and dignities followed. The same cannot be said for the rest of the crew, who suffered the indignity of resting where they fell after enduring

The Erebus and Terror Rediscovered

Detritus from the ship and human remains of those who perished turned up during searches carried out from the 19th century onwards. An assortment of artefacts and bleached white skeletons dotted King William Island's south coast and other places. In the early 1980s, a team led by Owen Beattie, based at University of Alberta, launched a bid to recover human remains and find out precisely what happened. But what was missing until 2014 and 2016 was the ships themselves.

The political manoeuvring behind the search for HMS Erebus and HMS Terror is vital. Canada wished to assert fresh authorities over its frozen north – the region was bequeathed to the country by the British in the 1880s – and the Harper administration declared the find and the Franklin legacy critical to Canada's sovereignty over the Northwest Passage.

HMS Erebus was discovered in 11 metres of water on 9 September 2014, in Queen Maud Gulf. While preserved, a large part of the stern had been punctured by sea ice. It was the HMS Terror find two years later, on 12 September, however, which caused scientists to rewrite the narrative, as the ship's wreck was found 60 miles away from its presumed resting place.



A copy of the chart of the Arctic regions supplied to the expedition

Defining moment

The death of Franklin

The death of Franklin, from starvation, was conveyed in the only document discovered regarding the expedition's progress. Written on a piece of naval paper and signed by Lt. Gore, the note mentioned coordinates, the dates the ships were abandoned (22 April) and Franklin. "Sir John Franklin died on 11th of June 1847," the message read.

11 June 1847

EXPEDITION TIMELINE

From the expedition's hopeful inception, to its disastrous disappearance

December 1844
At the instigation of Sir John Barrow, Second Secretary of the Admiralty until 1845, a new expedition is mounted to map the Northwest Passage once and for all is set up.

January 1845
Despite Admiralty misgivings regarding his age, Franklin was 59, he is given the commission to led the search for the Northwest Passage, after Captain James Ross declines the offer.

May 1845
Days before setting sail Franklin, recovering from a bout of flu, remonstrates his wife for placing an embroidered silk Union over his body while in bed. He declared it a bad omen.

19 May 1845
HMS Erebus and HMS Terror set off from Greenhithe, Kent. They sail for the Orkney Islands taking the North Sea route. Franklin is well regarded as a Captain by the officers and crew alike.

agonisingly slow deaths. Their bones were scattered along King William Island, way to the south. Some of the crew, forensic analysis showed, had been eaten by desperate survivors.

By 1847, the Admiralty were sending communiqués to Hudson's Bay Company traders and whaling ships, to keep an eye out for signs of the Franklin expedition. Others back home were getting antsy, but the Admiralty refused to act. In March 1848, they eventually offered 100 guineas to any whalers with news to share regarding the HMS Erebus and Terror. Franklin's wife, Lady Jane Franklin, too, drummed up £2,000 reward money for information.

In 1850, the Admiralty put together a £20,000 reward for any private vessel that could offer 'efficient assistance' to the Franklin ships. By now, they knew the HMS Erebus and HMS Terror would be in danger or succumbed to calamity. When they kicked into gear a host of search and rescue missions, the irony was stinging: more ships were sent out to find Franklin's expedition than there had ever been Northwest Passage expeditions.

"Graves, Captain Penny!" cried the messenger. The HMS Advance had been searching off Beechey Island, when the crewman returned to his captain and fellow officers that graves had been discovered on a stretch of land amid the snow and slate ground. Further investigation nearby yielded ropes, cloth, wood and brass bits. The search party were positively baffled by the 600 empty tin cans they found filled with pebbles. If their contents had gone bad, why were the food tins filled with these stones?

On 20 April 1954, almost six years to the day after the HMS Erebus and Terror were abandoned in the ice, after two winters trapped, Dr. John Rae of the Hudson's Bay Company discovered the truth. At Pelly Bay on the Boothia peninsula, and much further eastwards at Repulse Bay, Rae met Inuits with crucial information on the fate of the Franklin expedition. They said a party of 'Kabloonans' (their words for white people) had all starved to death. Around 40 men were seen dragging a sledge and boat on King William Sound and explained through sign language their ships had been crushed by ice. The Inuit hunters, later in the summer, found bodies scattered. Some were in a tent, some in the boat, others had died where they fell from exhaustion and starvation. This was second hand knowledge, passed on, but it broke the mystery and provided accurate enough information. Alas, the major and most gruesome detail was not something Victorian Britain had wished to hear – the survivors had eaten the flesh of the dead. Further searches in months and years ahead in the region slowly corroborated Inuit news.

The indifference of nature to humankind's desire to explore led to the deaths of 129 men and the loss of more lives and ships sent to look for the Franklin party. The consequences of temerity and discovery often involve the sacrificial and transgressive.

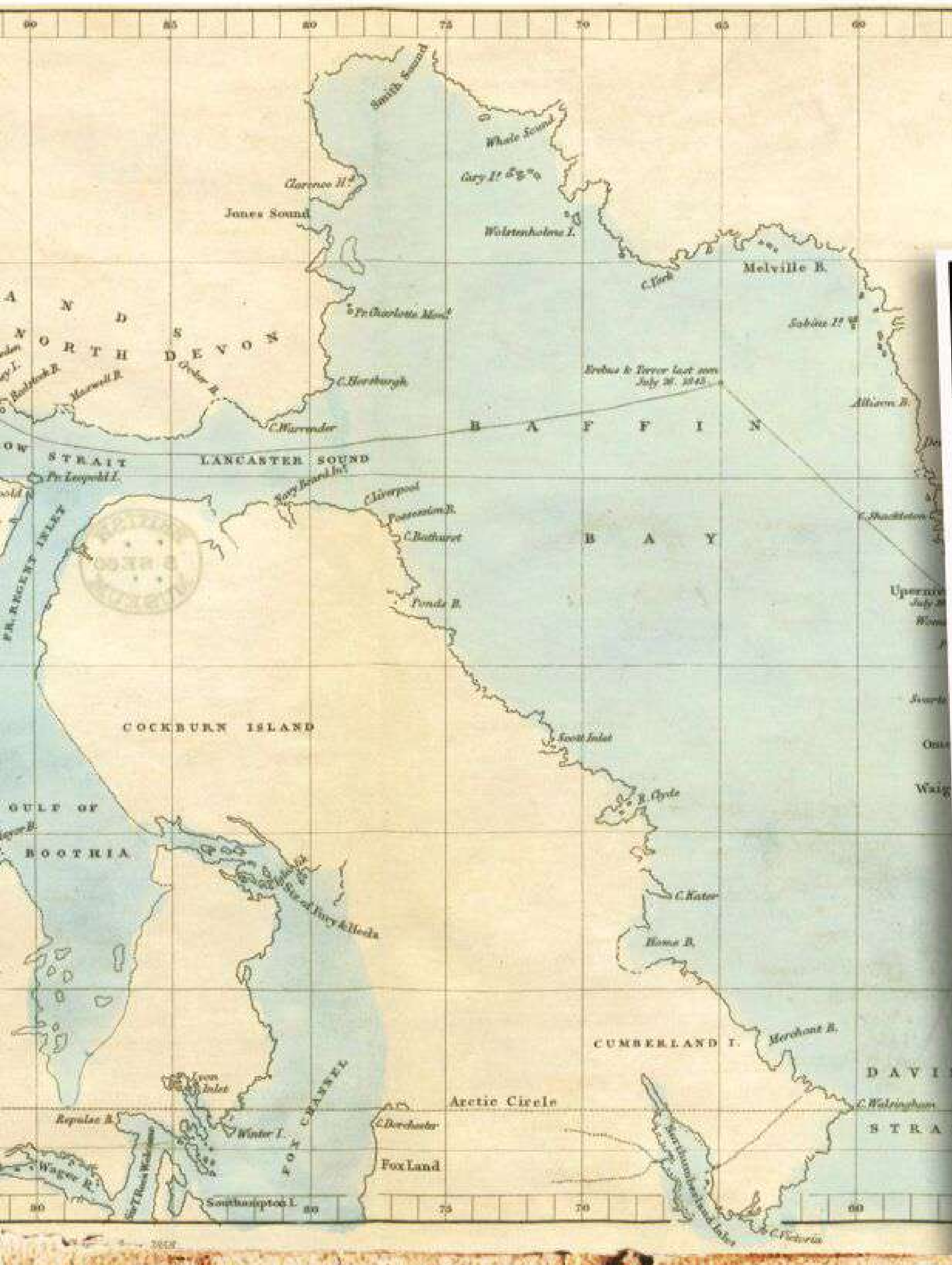
Defining moment

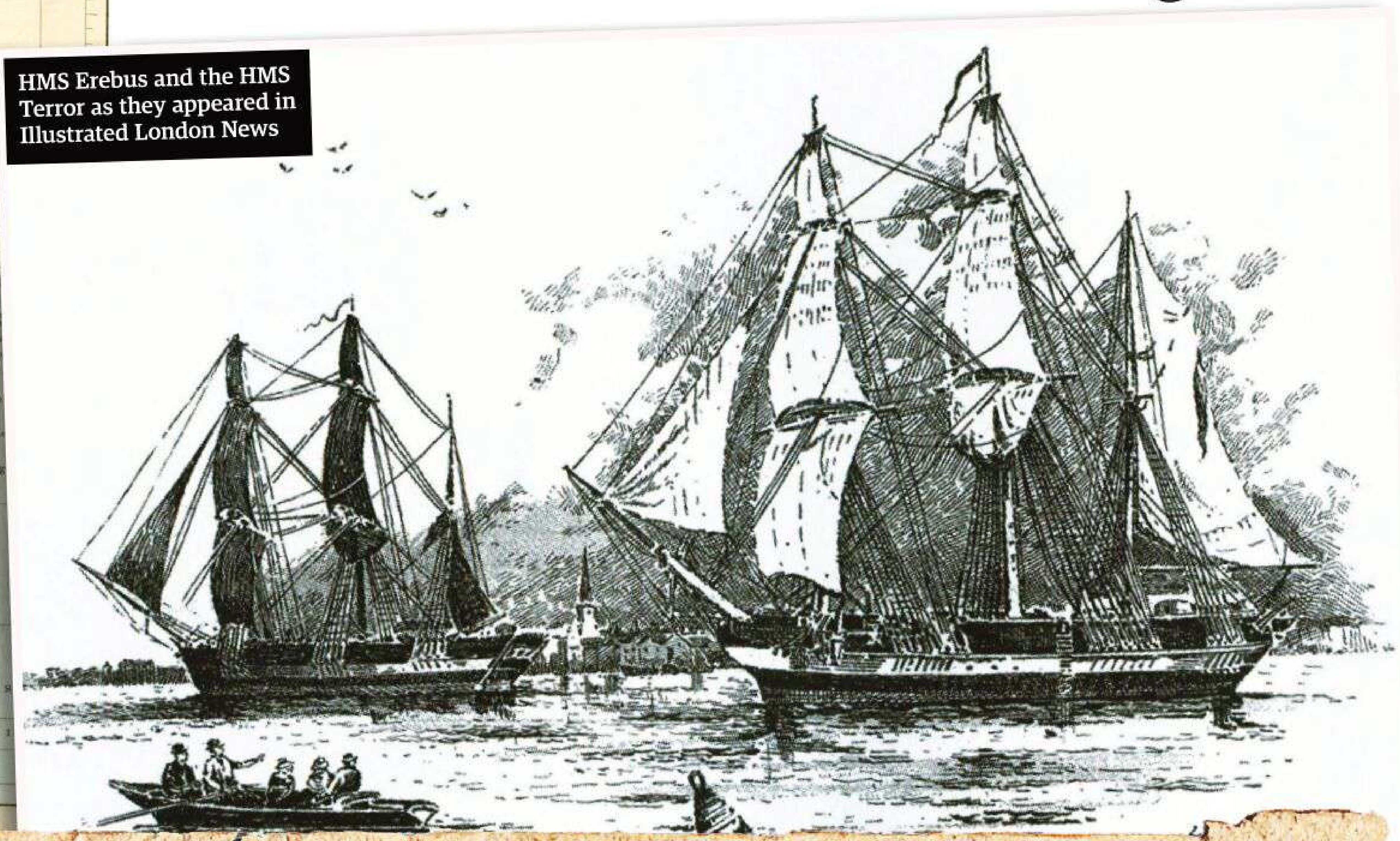
A return to the Terror?

60 miles from where it was believed ice had sank it, the wreck of the HMS Terror was confirmed. The new site provoked a theory: had the survivors tried to sail the ship south to the mainland? Evidence of the ship's exhaust pipe being in the location where a smokestack rose from the engine and the bowsprit pointing straight, as if it was moving through ice.

11 June 1847

"By now, they knew the HMS Erebus and HMS Terror would be in danger"




HMS Erebus and the HMS Terror as they appeared in Illustrated London News

June 1845
From Stromness, Orkney, the two vessels head out across the North Atlantic to Disko Bay, Greenland. They are accompanied by Barretto Junior, a transport ship, carrying provisions for the teams on board.

Late July 1845
At Disko Bay, west Greenland, the Barretto Junior slaughters ten oxen for their meat. Letters are written by officers and sent back with the ship. Five crew, unfit for the journey, return too.

January 1846
The expedition lands at Beechey Island for the 1846 winter, where three crew die. William Braine, John Torrington and John Hartnell are buried in neatly made graves, discovered in 1850.

12 September 1846
Erebus and Terror leave Beechey Island and set off across Peel Sound and down the west coast of King William Island. They are trapped in ice for two winters.

22 April 1848
The ships are abandoned having been stuck since September 1846. The ice failed to melt to free the ships the previous summer.

26 April 1848
The remaining crew have the plan to set off for the mouth of the Back River, which would lead to a Hudson's Bay Company outpost over 1,000 miles away. They had no chance.

"His expedition parties helped open up Africa to the Western world"

Henry Stanley's line "Dr Livingstone, I presume?" has become a famous remark from history

DAVID LIVINGSTONE

1813-1873

Brief Bio

Missionary and explorer, Livingstone made his name in the continent of Africa in his attempts to spread Christianity to the indigenous people, abolish slavery and discover the source of the River Nile. His efforts and expeditions were unsuccessful in their ultimate goals but nonetheless he became a national hero upon his death.

David Livingstone

Sparking the Scramble for Africa

The legendary Scottish explorer dedicated his life to exploring Africa and had an obsession for finding the true source of the River Nile

Before the first missionaries began to explore the continent, Africa was a vast unknown landmass for most Europeans and people from the Americas. One of the men who helped open up the hitherto mostly unseen continent was a Scot by the name of David Livingstone. He and a select few explorers blazed a trail through the region, initiating the Scramble for Africa, which would alter the political and economic landscape of the continent forever.

Born just south of Glasgow on 19 March 1813 in a tiny hamlet called Blantyre, Livingstone began working in a cotton mill at the age of ten. He was taught to read and write by his shopkeeper father and by 1836 he had gathered enough funds to begin studying medicine and theology. This rise from working-class life in Scotland to international fame was a very rare feat in the Victorian era.

Livingstone and his wife Mary had six children: Robert, Agnes, Thomas, Elizabeth, William Oswell and Anna Mary

As a young man, Livingstone undertook his studies at Anderson's University, Glasgow but later moved to London to continue his education at various institutions. His goal was to become a missionary doctor and go to China, but he was advised against travelling to the war-torn nation. In 1841 he was posted by the London Missionary Society to the Kalahari Desert in southern Africa, exploring Lake Nagmi in present-day Botswana.

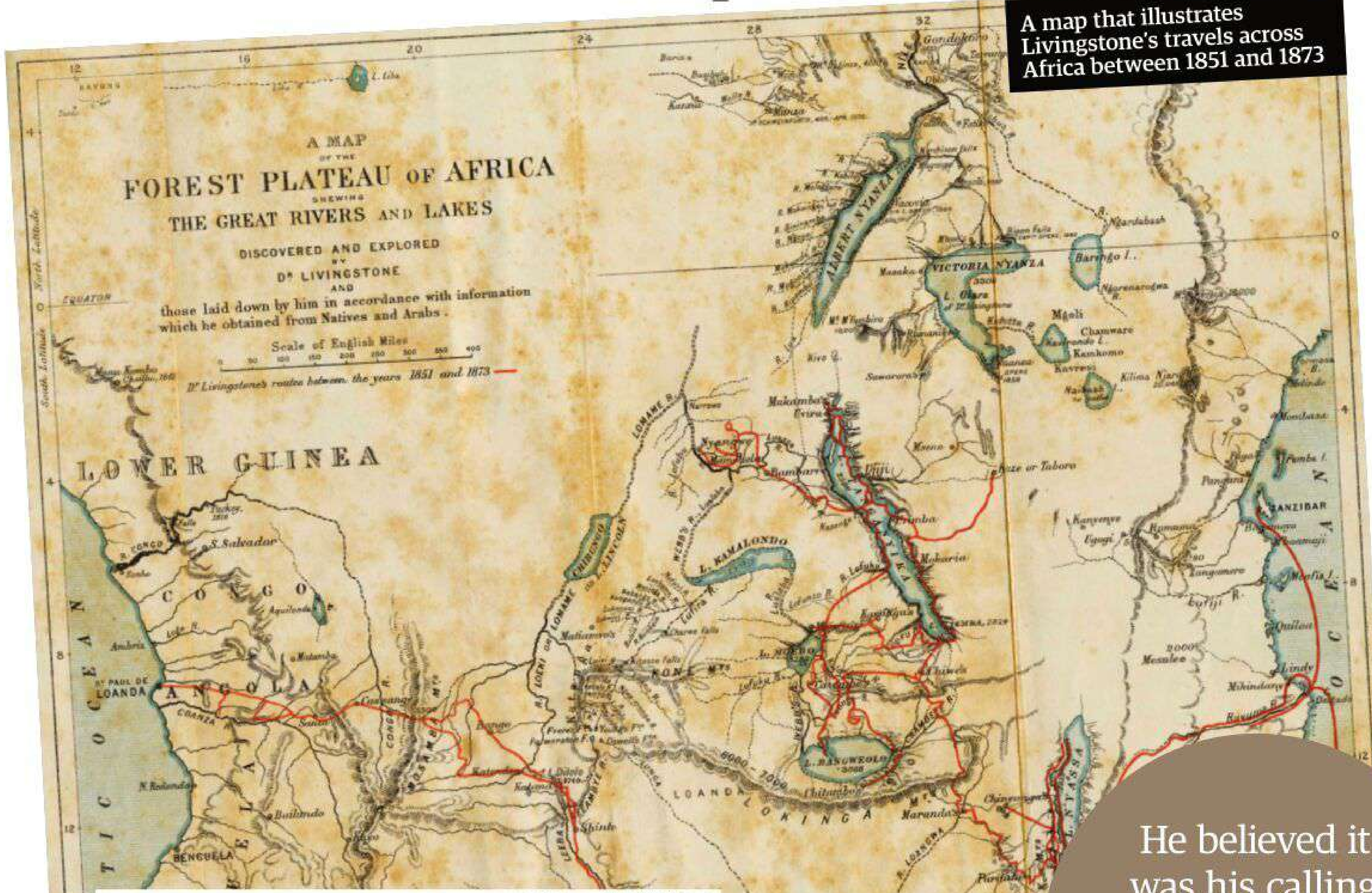
Livingstone was a man of God and on this first trip he introduced the peoples of Africa to Christianity and worked tirelessly to prevent the spread of the slave trade. By the time he returned to Britain in 1856, Livingstone had become a national icon. He embarked on speaking tours to tell of his experiences and wrote a bestselling book, *Missionary Travels and Researches in South Africa*.

By 1851 he had traversed the whole of the Kalahari via a combination of canoe, ox-back and on foot, almost dying from disease and wild animal attacks. Remarkably, his wife and children had initially joined him, but were forced to return home after a year due to ill health. He didn't stop, continuing to the coast in what is now modern-day Namibia and Angola.

In May 1856 he became the first European to cross the width of southern Africa as he reached the mouth of the Zambezi in Quelimane (present-day Mozambique) at the Indian Ocean. Known as the 'Smoke that Thunders' by locals, the colossal Zambezi waterfalls were renamed Victoria Falls by Livingstone.

A trailblazer, he was the first recorded white man to meet the local tribes of southern and central Africa. It is said that he personally released 150 slaves who worked near Lake Nyasa. His expedition ran into trouble when they had to abandon their original boat and there was a lot of infighting within the crew on the way. During his visits, he gained a reputation as a healer or 'medicine man' as he made a routine of treating the ill native Africans. His skill at removing tumours, for example, was unheard of in this part of the world.

"Livingstone firmly believed in the dignity of Africans at a time when the slave trade was rampant"


A MAP OF THE
FOREST PLATEAU OF AFRICA
SHEWING
THE GREAT RIVERS AND LAKES
DISCOVERED AND EXPLORED BY Dr LIVINGSTONE
AND
those laid down by him in accordance with information which he obtained from Natives and Arabs.
Scale of English Miles
Dr Livingstone's routes between the years 1851 and 1873
LOWER GUINEA
CONGO
ANGOLA
LOANDA
VICTORIA NYANZA
ZANZIBAR

A map that illustrates Livingstone's travels across Africa between 1851 and 1873

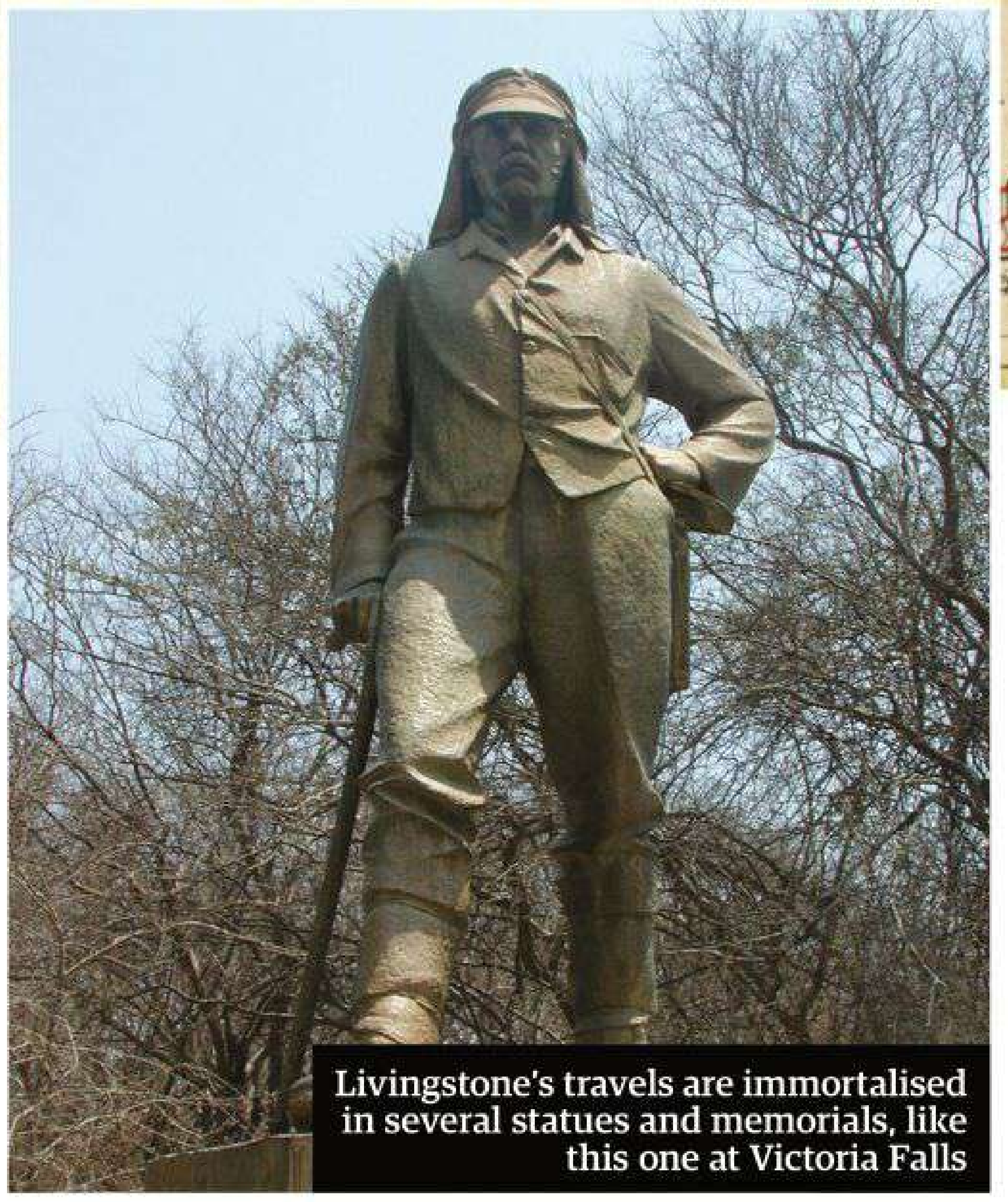
A prolific writer, Livingstone made sure that all his findings were noted down. His conclusions in *Narrative of an Expedition to the Zambesi and Its Tributaries* helped advance the knowledge of scurvy and malaria, diseases that were prevalent across the globe at this time. He was the first to use the drug quinine as a remedy for malaria, and his careful and methodical approach helped make his transcontinental journey one of the lowest ever in terms of death rates. The Scot was one of the first to link mosquitos to malaria and climate to the spread of tropical diseases.

After more official government-funded tours in the late 1850s, Livingstone had a tough few years. His wife Mary died of malaria in 1862, then two years later he was ordered to return home by a government unimpressed with his work. One of Livingstone's major aims was to publicise the horrors of the slave trade. Back in Europe, not many knew of the callous ways in which African people were being taken from their homelands and forced into labour. He became a staunch abolitionist and used his pen to raise awareness at home.

Unfortunately, his constant excursions can be argued to have had a negative effect on the future of Africa. By discovering a whole wealth of villages, water sources and trade routes, Livingstone and his expedition parties helped open up Africa to the Western world. As a result, colonialism and the Scramble for Africa by the major European nations was made easier. Some see imperialism as owing a lot to Livingstone and his fellow explorers.

By 1866, the 52-year-old Scot had secured enough funding to return to Africa, this time to seek the source of the River Nile and crusade against slavery. Landing

He believed it was his calling to explore Africa and open it up to Christianity by the will of God


Livingstone's travels are immortalised in several statues and memorials, like this one at Victoria Falls

Defining moment

University life

1836-41

Using savings amassed from years of hard work at Blantyre mill, Livingstone finally has enough money to go to university in 1836. After two years at Anderson's College, Glasgow he suspends his studies in favour of a year training with the London Missionary Society. He eventually moves to London in 1840 to complete a course in Medical Studies at the British and Foreign Medical School before returning to Glasgow to qualify from the Faculty of Physicians and Surgeons of Glasgow.

Defining moment

Finding a route to the coast

1852-56

Livingstone begins a four-year quest to find a route from the Upper Zambezi River to the coast. The expedition plugs many gaps in Western knowledge of Southern and Central Africa. Perhaps his most famous find is the discovery of an almighty waterfall, which Livingstone renames Victoria Falls after Britain's monarch. By 1856, he reaches the mouth of the Zambezi, becoming the first European to cross the width of southern Africa. He returns home to a hero's welcome. With the mapping of the Zambezi complete, Livingstone now has his mind set on finding the source of the Nile.

Timeline

1813

Birth of an explorer

David Livingstone is born in the small hamlet of Blantyre, just south of Glasgow. Born into a working-class family, he is the second to be born out of a total of seven.
19 March 1813

1823

Schooling and early work

At the age of ten, Livingstone begins work in a local cotton mill. He finds time to study in the evenings and is taught to read and write by his father.
1823

1836

Leaves school

To further his studies, the young Scot gains a place at Anderson's University, Glasgow. He goes on to study medicine and theology and becomes interested in natural history.
1836

1841

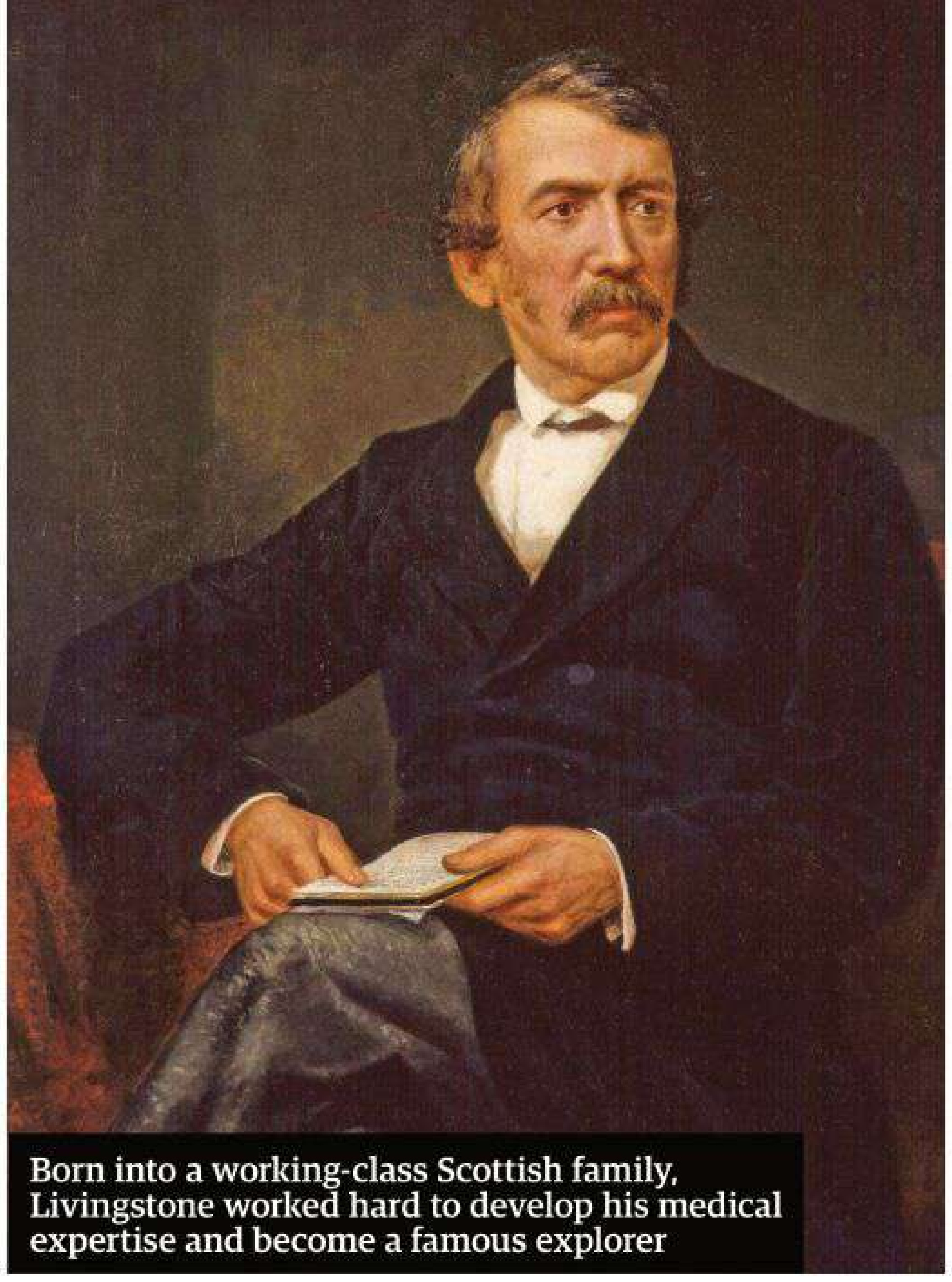
First assignment

After word of his expertise gets out, Livingstone is taken on by the London Missionary Society and posted to the Kalahari Desert in southern Africa. His aim is to spread Christianity and bring 'civilisation' to the native peoples.
1841

1845

Happily married

Returning home from his travels, Livingstone marries Mary Moffat, the daughter of a fellow missionary. They would have three sons and three daughters together.
January 1845



Born into a working-class Scottish family, Livingstone worked hard to develop his medical expertise and become a famous explorer

at Zanzibar, Livingstone got so caught up in his exploring that the British government lost track of the great man. On the way, the explorer is said to have witnessed a massacre of hundreds of people in the village of Nyangwe on the River Lualaba, which was said to have been undertaken by Arabic slave traders.

On his journey, he lost the majority of his medicine, animals and companions. In the end, money was raised by the *Daily Telegraph* and *New York Herald* to send journalist Henry Stanley to Africa to locate his whereabouts. In February 1871, Livingstone became stuck in the village of Bambarre in Congo. With almost none of his crew left and suffering from pneumonia and tropical flesh-eating ulcers, he was not in a good condition. Reports claim that he was bedridden and had begun to hallucinate, with only the Bible to provide him comfort. He was eventually found in October in Ujiji, Tanzania, as he pressed on to find the source of the world's longest river. After staying with him briefly and taking on his fresh supplies, Livingstone parted ways with Stanley to continue his journey.

Although his health was failing, Livingstone was dedicated to his work and refused to leave Africa. This determined and stubborn attitude eventually proved to be his undoing; he died at the age of 60 at Chitambo's village, near Lake Bangweulu, North Rhodesia (now Zambia) on the night of 30 April 1873. The British public mourned his loss and he was given a prestigious burial in the nave of Westminster Abbey. He is buried next to James Rennell, a former explorer who founded the Society for African Exploration.

Livingstone is remembered as a man who firmly believed in the dignity of Africans at a time when the slave trade was rampant over the continent. Even though he didn't quite reach the source of the Nile, his contribution to society was his constant questioning of the sustainability of Europeans using Africa as a sort of commercial enterprise. When his embalmed body was returned to Britain – via a 1,603 kilometre (1,000 mile) trek to Zanzibar that took ten months – it was found that his arm had been broken by a lion, further demonstrating the tough ordeals that he had undertook on his journeys. Before the body left Africa, his heart had been buried under a mpundu tree in the village. Both metaphorically and physically, David Livingstone's heart will always be in Africa.

In the David Livingstone National Memorial in his hometown of Blantyre, his gravestone reads: "Brought by faithful hands over land and sea, here rests David Livingstone, missionary, traveller, philanthropist, born March 19. 1813 at Blantyre, Lanarkshire, died in May 1873 at Chitambo's village."

For 30 years his life was spent in an unwearied effort to evangelise the native races, to explore the undiscovered secrets and to abolish the desolating slave trade of central Africa. With his last words he wrote, "All I can add in my solitude, is, may heaven's rich blessing come down on every one, American, English, or Turk, who will help to heal this open sore of the world".

> His son Robert fought for the Union side in the US Civil War and died of battle wounds on 5 December 1864

Defining moment

Doctor Livingstone, I presume?

1866-1871

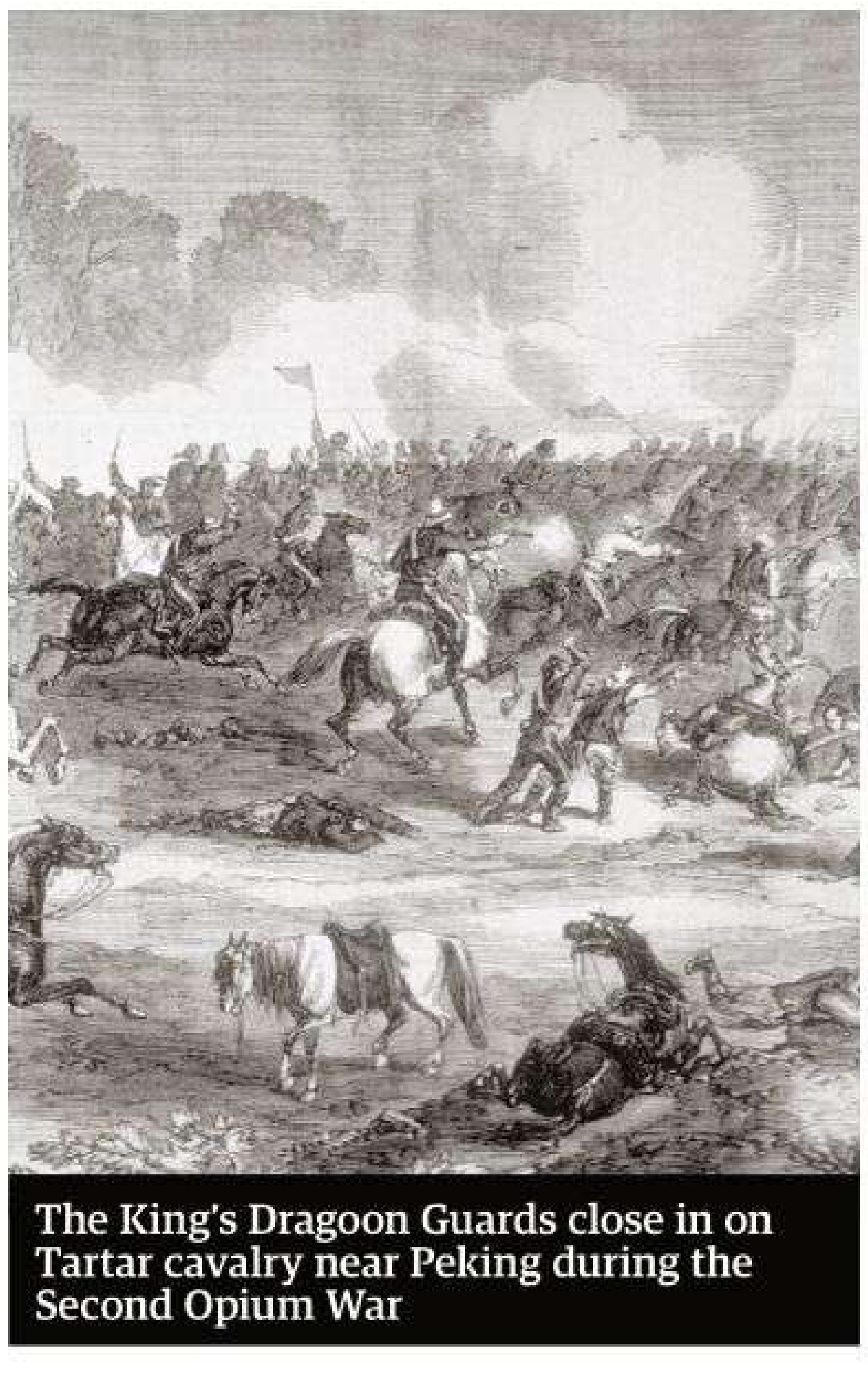
By 1866, the now veteran explorer is aged 52, but is still intent on discovering the source of the Nile. The trip takes its toll as he loses animals, medicine and porters, but Livingstone soldiers on. He is gone so long that fellow explorer Henry Stanley is dispatched to find him. After a long search, Livingstone is eventually found near Lake Tanganyika in October 1871 – during their meeting, Stanley utters that now famous phrase. Livingstone is resupplied but never manages to achieve his goal after ill health causes him to stop.

The Second Opium War

David Livingstone was encouraged not to go to China, and for good reason. Between 1856 and 1860, the country was at war with the British in a conflict known as the Second Opium War. After the First Opium War ended with an unequal treaty, a Chinese vessel believed to have been smuggling initiated a second conflict. The British, assisted by American warships, responded with force, shelling Canton (modern-day Guangzhou) before being driven back by the resurgent Chinese.

The Western powers sought the help of the French and returned in May 1858, this time taking Canton and a number of forts near Tientsin. The treaty of Tientsin was subsequently signed, which opened up China to trade with the West. However, China was not content with these terms and took the fight to the British fleet situated at the Peiho river.

The Second Opium War came to an end with one final land assault as the British and French took Peking, resulting in the fleeing of the Chinese Emperor Xianfeng. In defeat, China didn't have any choice but to agree to Western trade terms in yet another unequal treaty. It was at this point that a 99-year lease was signed, giving Britain control of the 'New Territories' around the port Hong Kong until 1997.



The King's Dragoon Guards close in on Tartar cavalry near Peking during the Second Opium War

1856

Return home

After his expedition ends, he returns home a national hero and embarks on speaking tours around Britain. His book *Missionary Travels and Researches in South Africa* becomes a bestseller.

1856

1858

Back to Africa

The now-famous explorer begins his longest excursion to date, a five-year exploration mission of eastern and central Africa. Sadly, his wife Mary would go on to die from malaria in 1862.

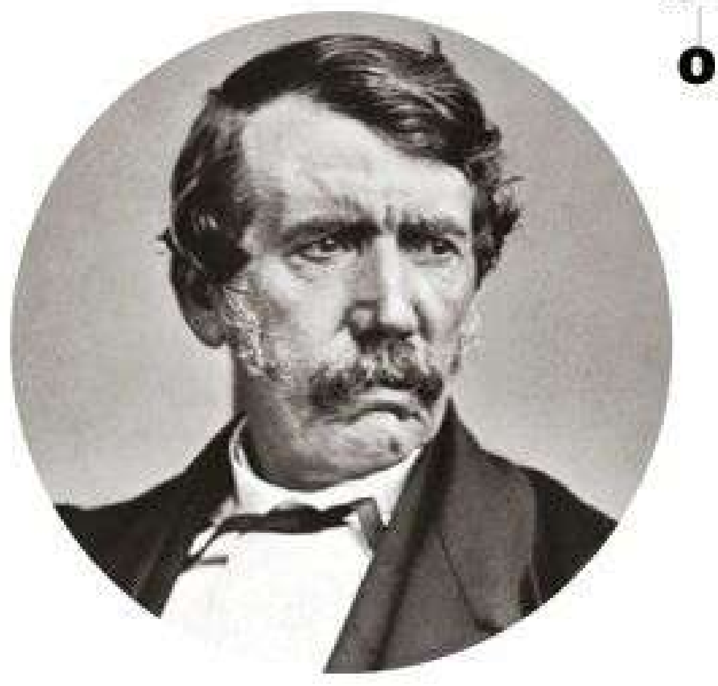
1858

1864

Government pressure

After an unrewarding trip, the British government orders Livingstone to return to Britain. Back home, the Scot begins to write about the horrors of the slave trade, publicising this to many for the first time.

1864



1866

One last expedition

After acquiring private funding, Livingstone sets off once again for Africa, this time in search of the source of the River Nile. He also takes this opportunity to explore the slave trade further.

1866

1873

Final years

After years of exploration, Livingstone is dogged with health problems and dies on the night of 30 April 1873. He is buried in Westminster Abbey and goes on to be remembered as one of Britain's greatest explorers.

1873

John Hanning Speke

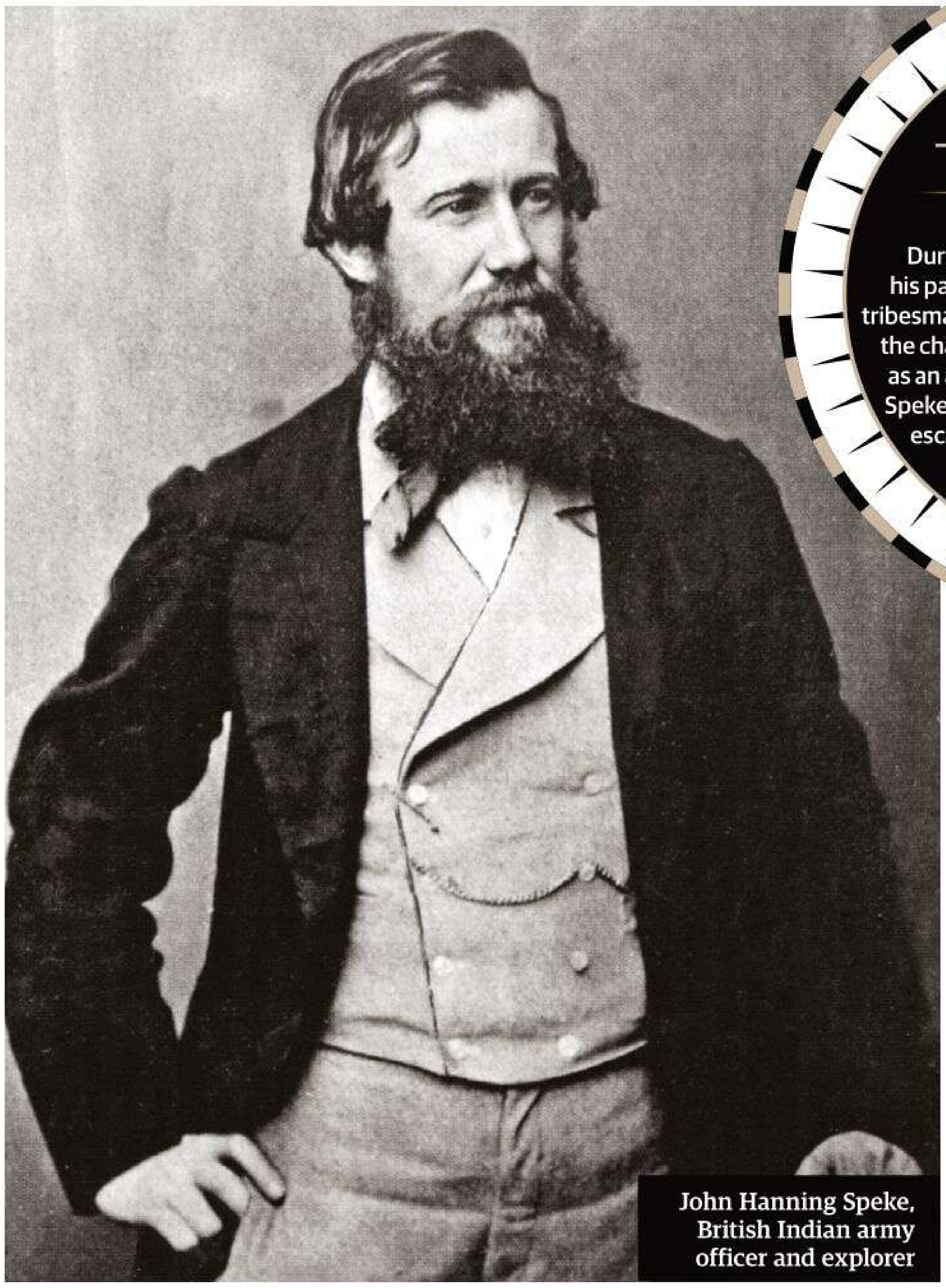
Finding the Source

Beset by gruelling conditions, internal politics and professional disagreement, John Speke would beat the odds to locate the source of the River Nile

By the 19th century the British Empire spanned the globe, an empire so vast that the Sun would never set on it. Despite the reach, there was still much to learn about the world. In Egypt, the mighty River Nile had sustained life for thousands of years, yet no one knew where the source was. Alexander the Great had inquired this, the Roman Emperor Nero had sent men in search of it, but the question still eluded humanity. It would fall to John Hanning Speke, a military man born in the West Country, to discover the true source of this mighty river. Completing three arduous treks across the heartlands of Africa, John's discovery would be disbelieved and ridiculed in his lifetime, but today he stands as the man who found the source of one of the greatest waterways in the world.

Aged 17, Speke joined the British army in 1844, and during his leave, fostered an adventurous spirit exploring Himalayan mountain ranges in Asia. His wanderlust saw him join an expedition to the African heartland in 1854, headed by a man named Richard Burton. While relations were initially warm between the two men, a battle with 200 Somaliland tribesmen would see Burton unfairly question Speke's courage. The first expedition was an abject failure and the only profit to be made came from natural specimens the Speke had collected along the way.

This is not surprising, as trekking across mainland Africa in this period was an extreme undertaking. With pack animals like camels susceptible to disease, much of the equipment and provisions would need to be carried by the explorers, who unfortunately were just as likely to fall ill as their beasts of burden.



John Hanning Speke, British Indian army officer and explorer

Defining moment

Fight or flight

During Speke's first African expedition, his party came under attack by Somaliland tribesman. Speke ducked through a tent to view the chaos which Richard Burton interpreted as an attempt to flee. By all other accounts Speke fought bravely and was captured. He escaped but the relationship between the men was forever soured.

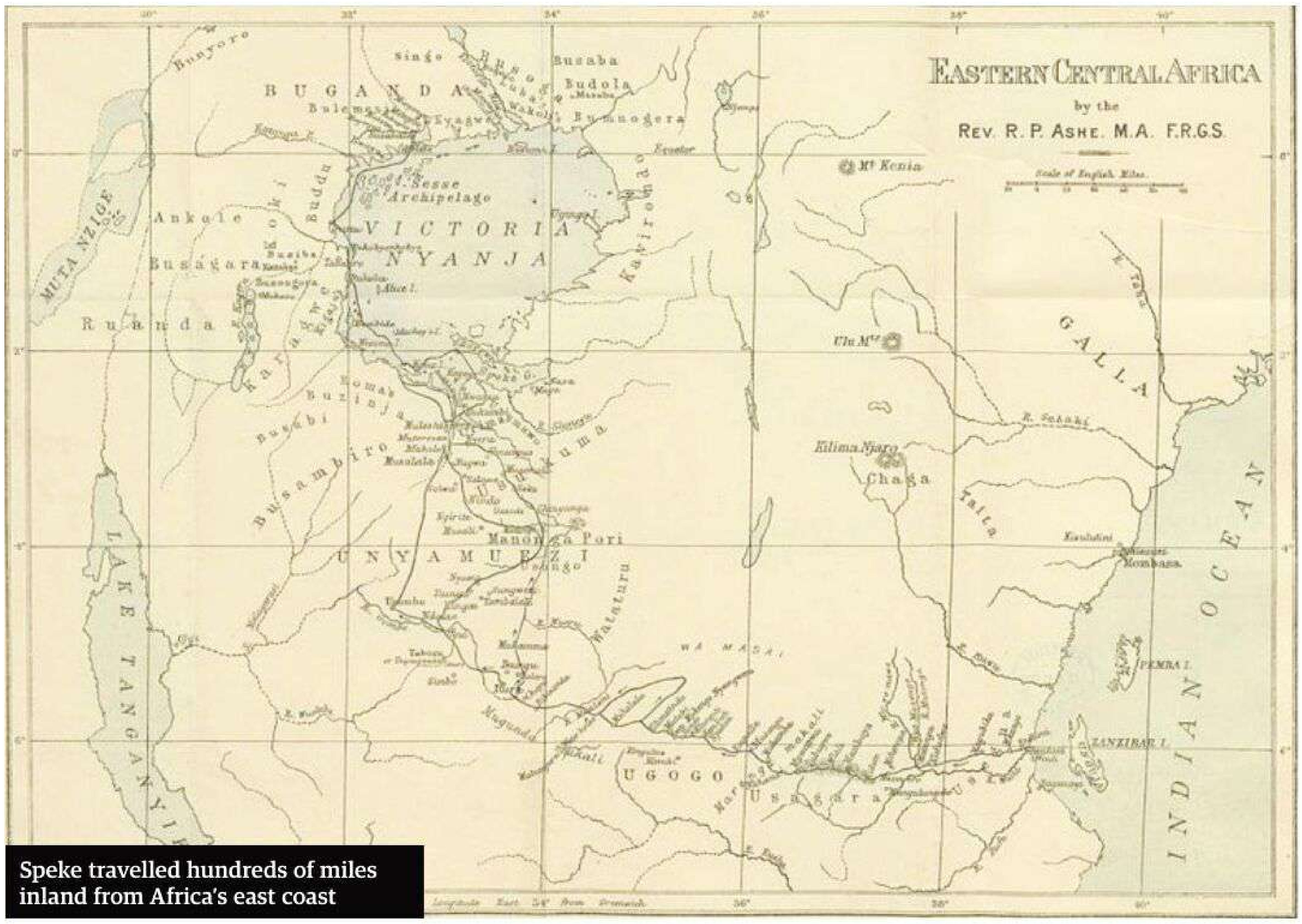
1854

JOHN HANNING SPEKE

1827-1864

Brief Bio

Originally a soldier by trade, John Speke would go on to discover the source of the Nile river, a water and life-giving source that had been a mystery to mankind for thousands of years. Due to a professional feud with another explorer named Richard Burton, Speke would not receive the recognition that he rightly deserved in this lifetime.



Speke travelled hundreds of miles inland from Africa's east coast

"Speke rightly assumed that Lake Victoria was the source of the Nile"

With renewed vigour, Speke joined Burton on a second expedition to east Africa in 1856; funded by the Royal Geographical Society the expedition had only one aim, to find the source of the River Nile.

Landing in Zanzibar by June 1857, Speke and Burton both fell ill during the expedition and although they discovered Lake Tanganyika by February 1858, the conditions were getting the better of them. Unable to continue, Burton let Speke, who had recovered more, follow up on rumours of a larger lake to the northeast. Since both men could not prove Lake Tanganyika as the source, Speke eagerly followed up on the 'a vast expanse' of the northern lake. On 30 July 1858, he found it, and named it Lake Victoria, after the British Empire's reigning monarch. Speke rightly assumed that Lake Victoria was the source of the Nile, although his claim was increasingly difficult to prove. With his vision almost gone from tropical illness and much of the surveying equipment lost, Speke could only make educated guesses of the lake size. However, by observing the temperature at which water boiled by the lake, he could ascertain that Lake Victoria was much higher than Tanganyika, making it a more viable candidate.

Now the enmity between the two men would become palpable, as returning to England, Speke set about declaring the source of the Nile was no longer a mystery. According to Burton, who arrived after, the two men had agreed to keep the source a secret and to put forward Burton's theory of Lake Tanganyika as the source, incorrectly of course. The rift between the two men would be widened further when the Royal Geological Society chose Speke to lead another expedition to confirm his theory.

In April of 1860 Speke again journeyed for Africa. Years of Arabic slave traders operating in the area had left the local tribes with a severe distrust of any foreigners, and so Speke was forced to give gifts or trade his way towards Lake Victoria, delaying the expedition a great deal. Finally reaching his destination in July of 1862, Speke found the White Nile flowing out of the lake, confirming his theory and proving his worth over his competitor, Burton. What happened next is still not quite understood, but Speke failed to follow up his discovery to fully map the Nile flowing out of the Lake, although it is possible that the strenuous journey had taken its toll on the expedition at this point. Thinking the matter settled, Speke returned in triumph, addressed the RGS of his findings and chronicled them in his 1863 book *The Journal of the Discovery of the Source of the Nile*. Speke's expertise was not in academia, and the book came across as exceedingly arrogant. His next work, *What Led to the Discovery of the Source of the Nile* published the next year, talked of the second expedition and was an attempt to win round his opponents, Burton included. This too was a flop and Burton challenged Speke to a debate to settle the matter once and for all.

Tragically, Speke died in a hunting accident the day before the debate, shooting himself in the armpit while carrying a cocked gun over a wall. Burton claimed the death was a suicide and that Speke didn't have the courage to back up his claims.

Years later, Henry Stanley would confirm without a shadow of a doubt that Lake Victoria is the source of the Nile, leaving John Speke vindicated in the eyes of history.

Defining moment

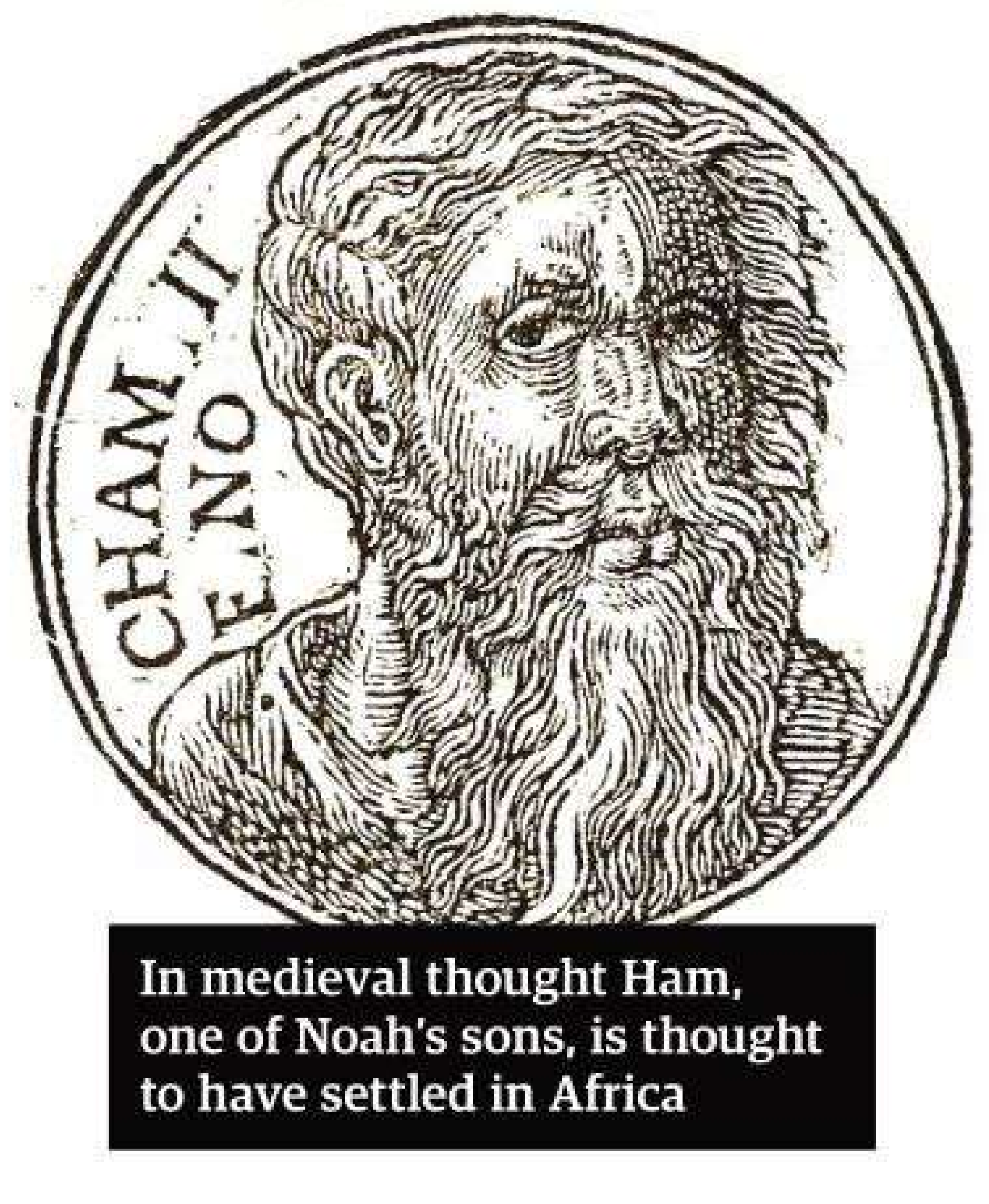
Love lost in Africa

During his second expedition, Speke found himself in the territory of the Mutesa people. The Mutesa gifted them two girls out of their queen's entourage. Speke fell for one of the girls but there were no reciprocate feelings. Heartbroken, Speke would break from the tribe, using the relationship to access further exploration.

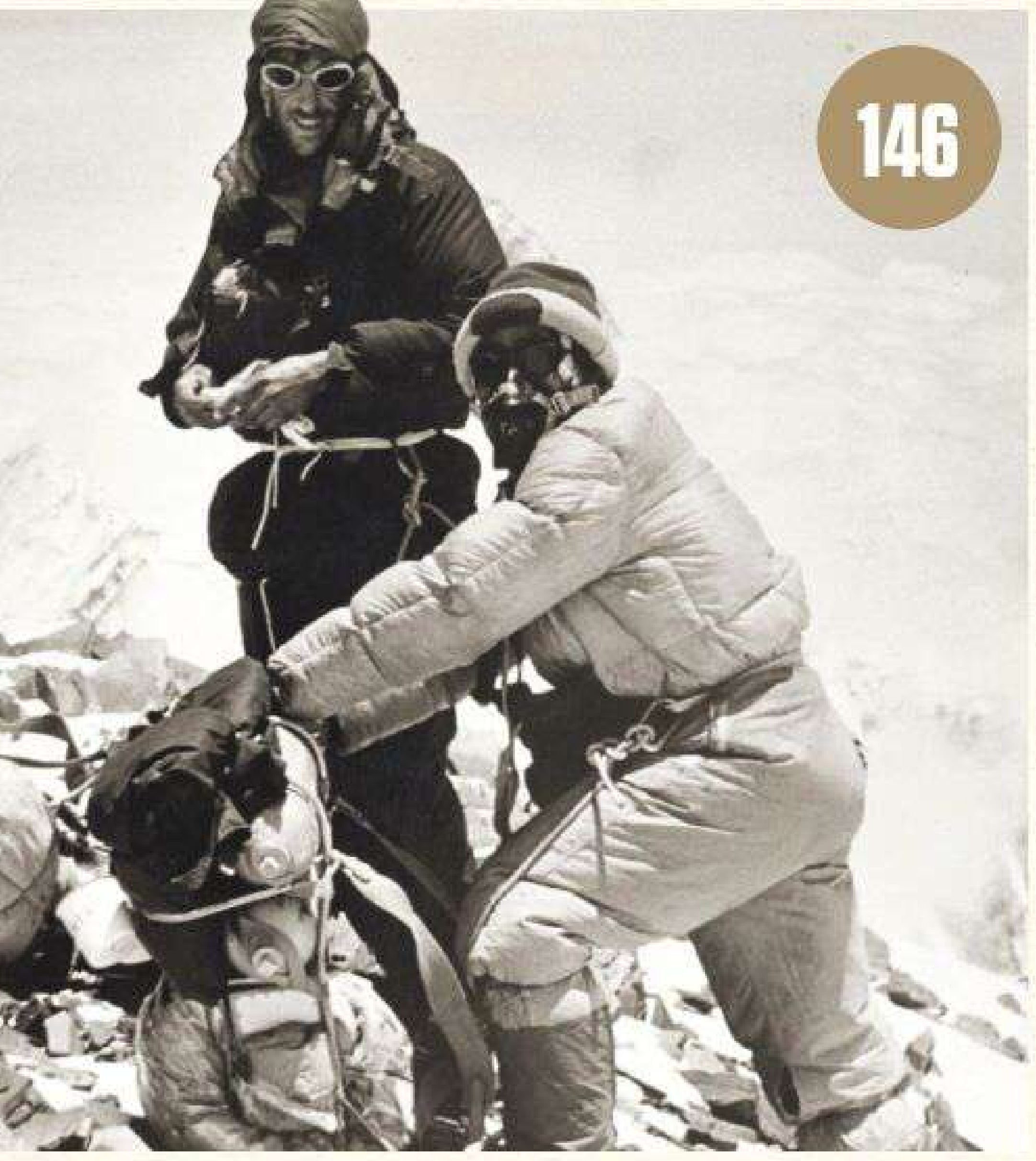
1862

The people of Ham

During his travels, John Speke would come to support the Hamitic theory; the belief that some African tribes like the Tutsi people were direct descendent of Ham, Noah's son, from the Old Testament. Scholarly thinking in the Middle Ages had guessed that all Africans were direct descendants of Ham, although Speke believed that the Tutsi's lighter skin tone picked them out as the true ancestors and was the driving force behind this theory, seeing them as "strikingly existing proof of the Holy Scripture". He described them as a "superior race" of men who he perceived as radically different to other Africa tribes over which they ruled. This was due to their "fine oval faces, large eyes… denoting the best blood of Abyssinia" with their most striking features being "a high stamp of Asiatic feature, of which a marked characteristic is a bridged instead of bridgeless nose". With this 'proof' he believed that the more northern "civilised" Africans were superior to the more "barbaric" central Africans. The theory still had adherents well into the Sixties, with Speke's work serving as more evidence for this bizarre logic.



In medieval thought Ham, one of Noah's sons, is thought to have settled in Africa



Final Frontiers

Explore the gruelling modern journeys that took exploration to a whole new level

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Scott and Amundsen's missions to the South Pole ended in tragedy and triumph

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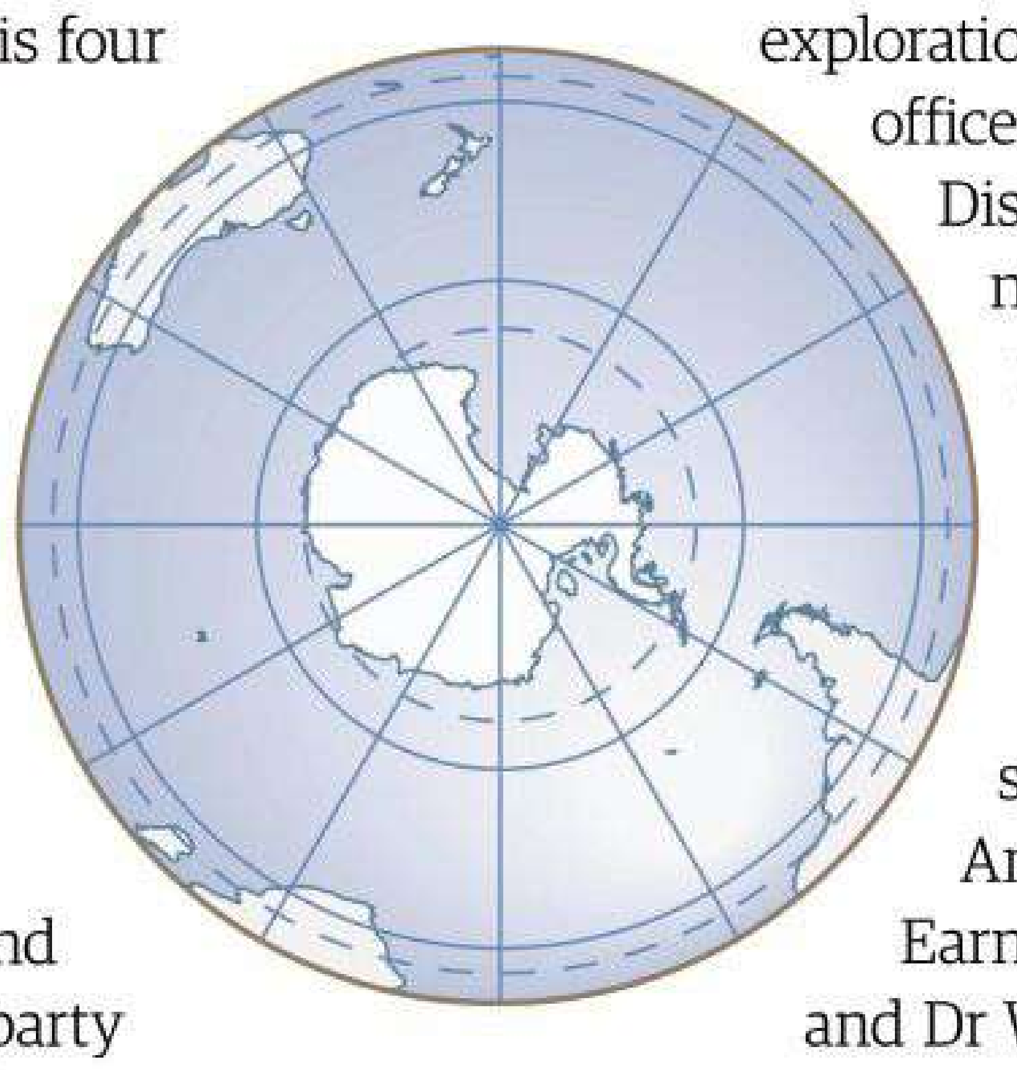
Race to the Antarctic

Tragedy and Triumph

How lies, Captain Scott's old imperial view of exploration and a tug of war between science and discovery led to his team dying in the freezing ice desert of Antarctica

When the news arrived via telegram the response was a mixture of shock, disbelief and amazement. It would also ultimately contribute to the death of an English Captain and his four men as far away from the land of hope and glory anyone could get.



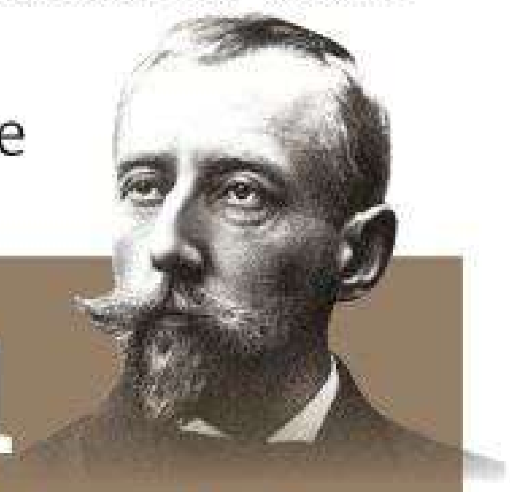
The telegram revealed that two parties had both reached the North Pole in the Arctic, which for decades had been the goal of explorers around the world. Both men claiming to have reached one of the most inhospitable points on the planet were American – Robert E Perry and Dr Frederick Cook. While neither party provided sufficient information to silence the sceptics the report stirred one explorer into action: Roald Amundsen.

The news shattered the Norwegian's dream to be the first to reach the North Pole, so he changed his goal to the South Pole. Amundsen knew that an English captain called Scott was also preparing for such a journey and would be furious to know he had a rival. He made his preparations in secret, hand-picked a small team and sailed from Norway under cover of darkness. Only when the ship had reached the island of Madeira off West Africa did he tell his shocked men of their actual destination before sending off telegrams informing the world of his plans. One of these was to Scott and simply read: "Beg leave to inform you proceeding Antarctica. Amundsen." The race was on.

Robert Falcon Scott was no stranger to Antarctic exploration. In 1901 the British Naval officer captained the custom-built ship Discovery in its quest to explore new land and carry out scientific research. The ship did not return to British shores until 1904 and the expedition instilled some beliefs in Scott that would be key in this later race with Amundsen, such as his distrust of huskies.

An expedition in 1902 saw Scott, Earnest Shackleton and Dr Wilson set off on a bold journey to travel south and see how far they could get. Scott noted in his diary that he would "prefer ten days of man-hauling to one spent in driving a worn-out dog team." When the team returned to their base camp they had been away for over 90 days and covered 1,545 kilometres (960 miles). They had come closer to the South Pole than anyone else had – but this was not enough for the ambitious explorer.

Scott returned home a hero and the Navy promptly promoted him to the rank of captain. He was suddenly elevated to high society – he attended dinners and drinks with some of London's most exclusive socialites, and it was here that he met his future wife, Kathleen Bruce an artist and sculptress. While he was in England his former team member, Shackleton, set off on his own expedition to the South Pole – the two had quarrelled on the Discovery and this latest news drove a final wedge between them – and although he didn't reach the fabled pole, he was also considered a hero and was knighted on return. Britain's seemingly endless thirst for brave explorers was tied into the idea of national prestige; the largest empire



12 September 1911

Prospects of milder weather doubtful – all this persuaded me to settle for reaching the depot at 80° this time... To risk men and animals out of sheer obstinacy and continue, just because we have started on our way – that would never occur to me. If we are to win this game, the pieces must be moved carefully – one false move, and everything can be lost. **R A**

Captain Robert Scott's ship, the Terra Nova

Exploration history

1901-1904
Led the Discovery expedition during which Scott gained the record for proximity to the South Pole. He retuned home a hero.

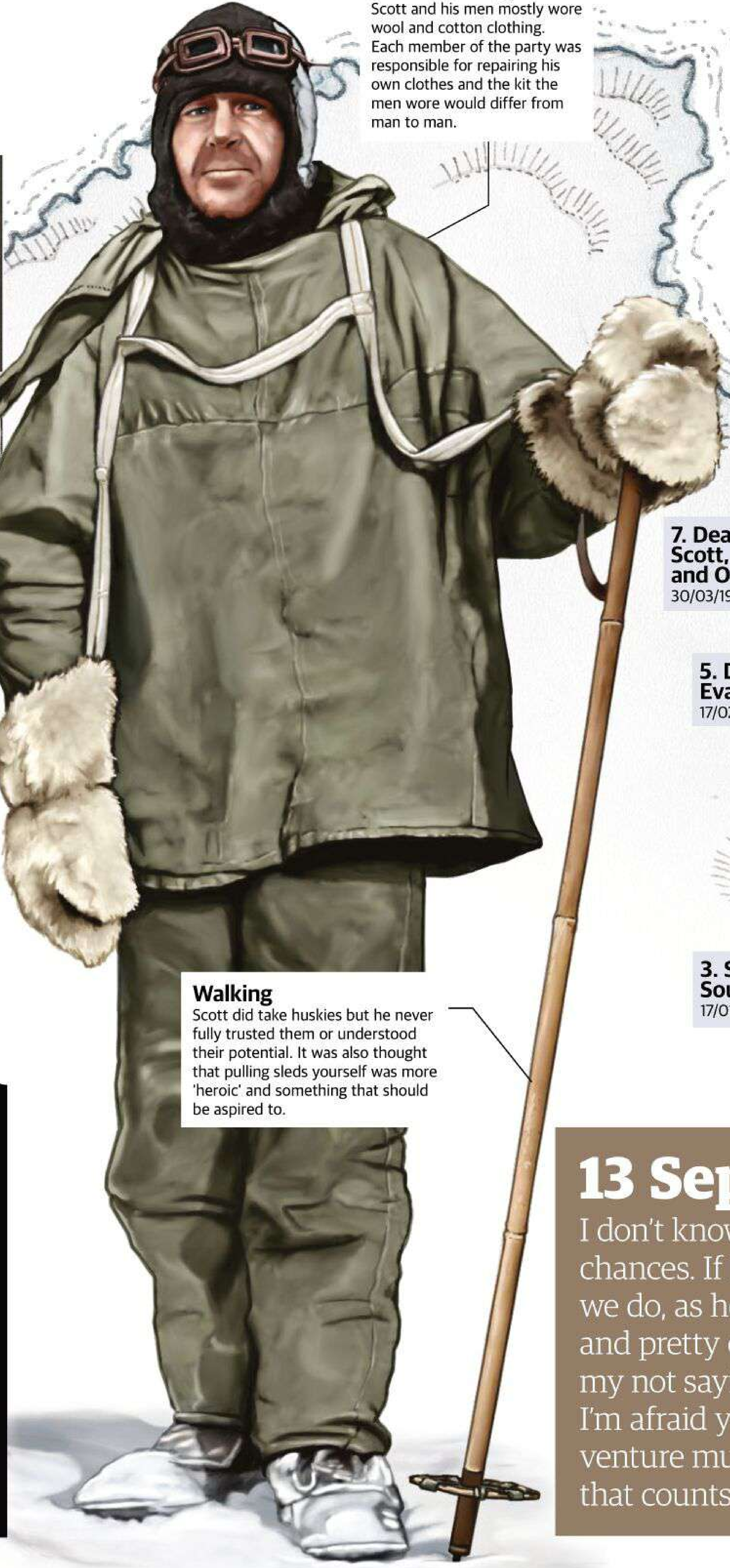
1910
Leader of the Terra Nova Expedition to the South Pole. The trip also had scientific ambitions.

ROBERT FALCON SCOTT

1868-1912

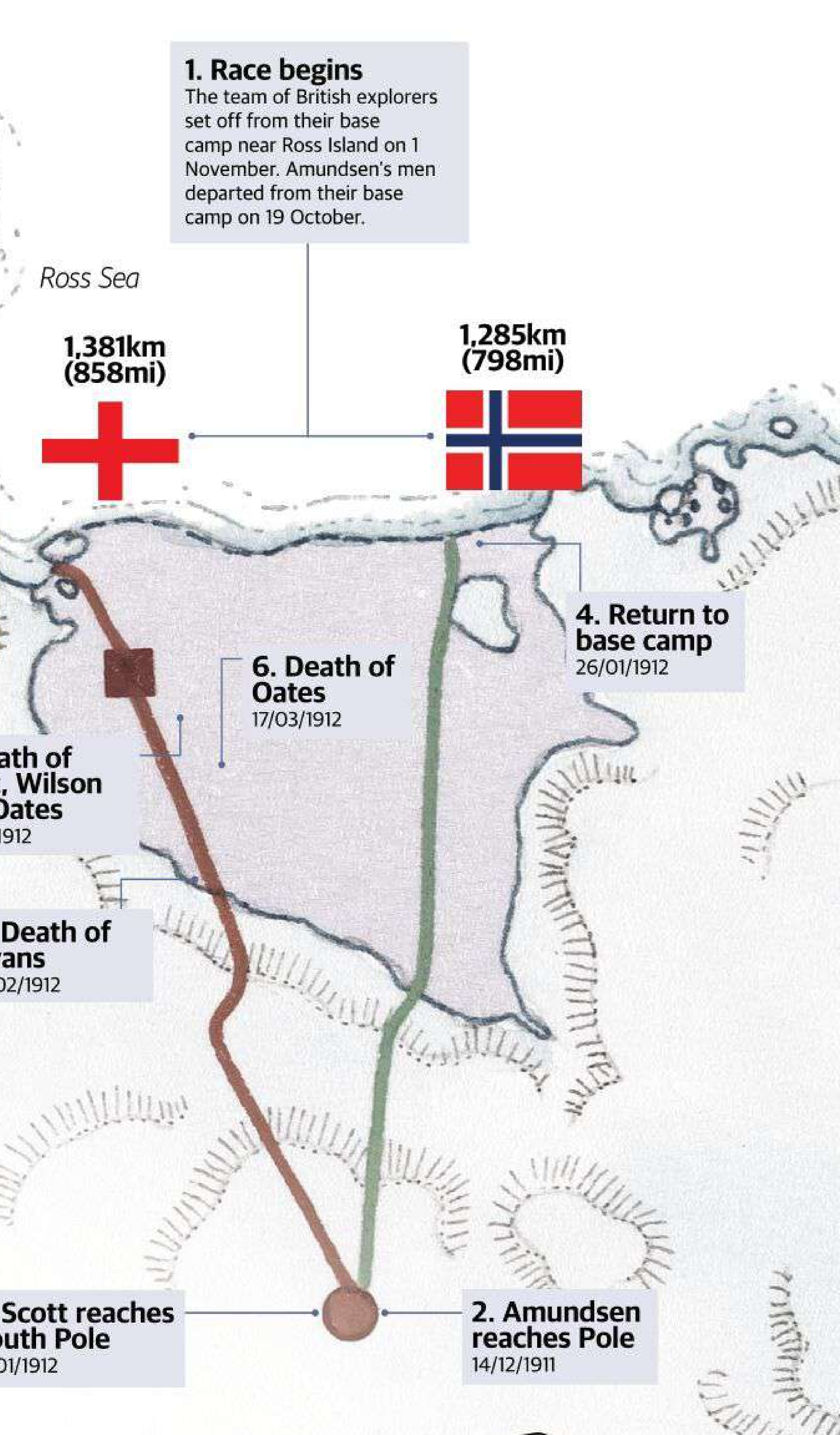
Brief Bio

Scott joined his first ship when he was 13 years old and became an officer in the Royal Navy where he rose to the rank of captain. While on home leave in 1899 he learned of an impending Antarctic exploration for which he volunteered to lead and which caught the public imagination, with him returning home something of a celebrity. In 1910 he set off on an expedition to the South Pole, a journey from which he would not return.



Wool clothing
Scott and his men mostly wore wool and cotton clothing. Each member of the party was responsible for repairing his own clothes and the kit the men wore would differ from man to man.

Walking
Scott did take huskies but he never fully trusted them or understood their potential. It was also thought that pulling sleds yourself was more 'heroic' and something that should be aspired to.



1. Race begins
The team of British explorers set off from their base camp near Ross Island on 1 November. Amundsen's men departed from their base camp on 19 October.

2. Amundsen reaches Pole
14/12/1911

3. Scott reaches South Pole
17/01/1912

4. Return to base camp
26/01/1912

5. Death of Evans
17/02/1912

6. Death of Oates
17/03/1912

7. Death of Scott, Wilson and Oates
30/03/1912

13 September 1911

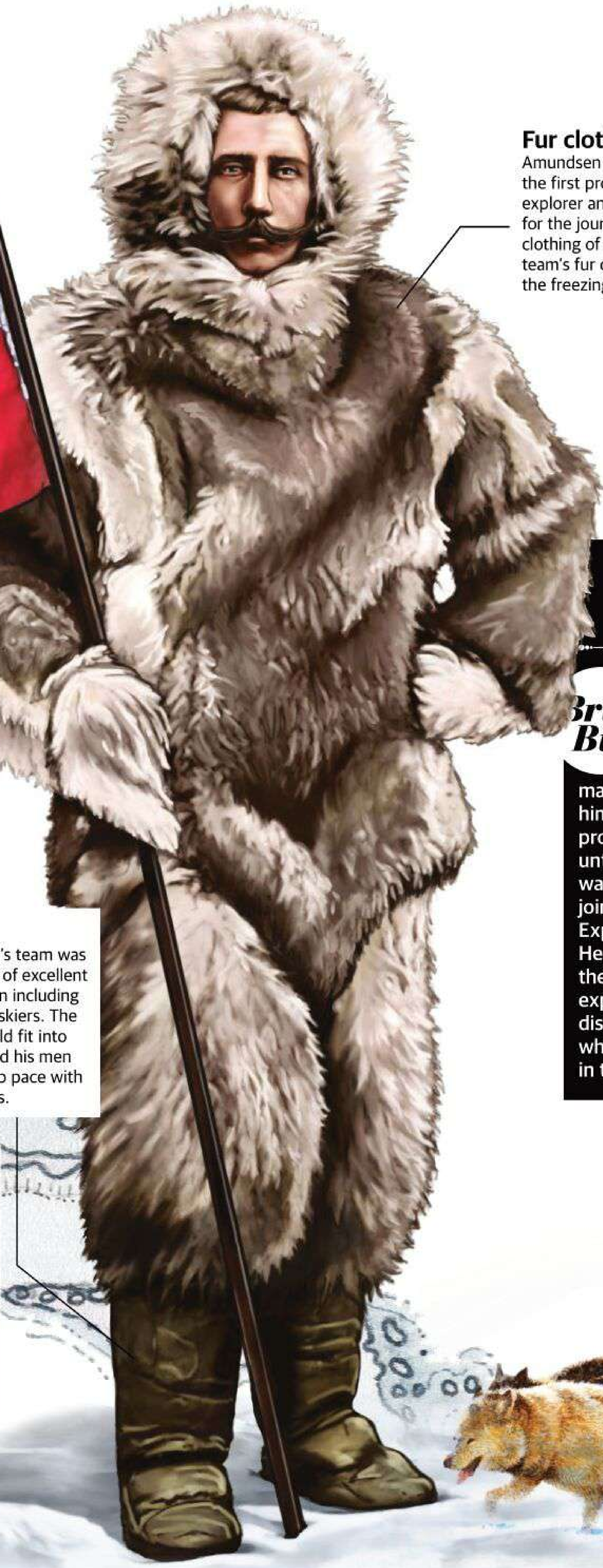
> I don't know what to think of Amundsen's chances. If he gets to the Pole it must be before we do, as he is bound to travel fast with dogs and pretty certain start early… You can rely on my not saying or doing anything foolish, only I'm afraid you must be prepared for finding our venture much belittled. After all, it is the work that counts, not the applause that follows. **R S**

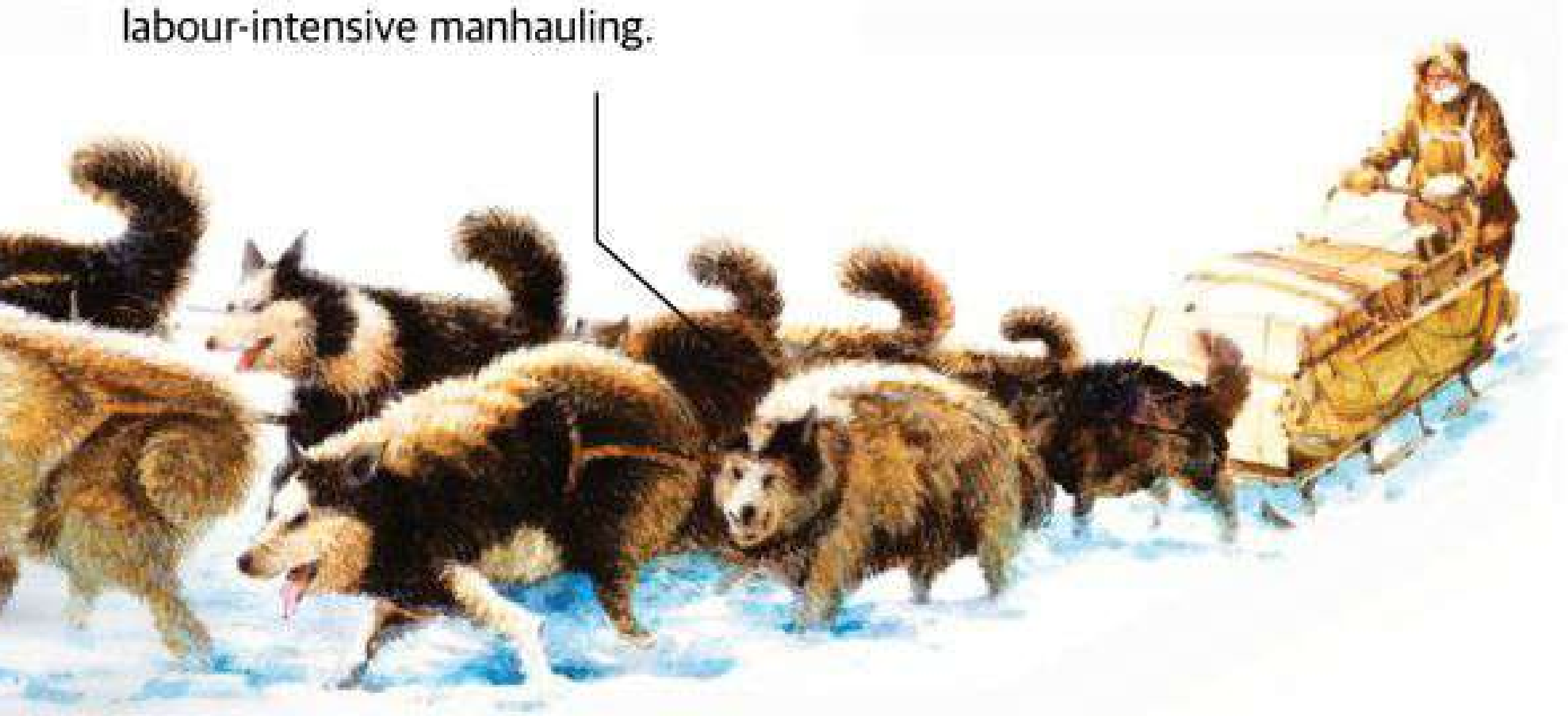
in the world wanted to grasp another small and icy corner into its not inconsiderable bosom. The South Pole was the last great, unmapped corner of the world; the last symbol of discovery. Scott wanted this honour for himself and his country.

The British explorer began to assemble his team and it was clear from the outset that this was not just about reaching the South Pole first – the team also had genuine goals of scientific discovery. This feeling was summed up neatly in a letter from the expedition's scientific director, Dr Edward Wilson, to his father in which he wrote; "We want the scientific work to make the bagging of the Pole merely an item in the results." This ambition, this desire for the trip to also be about science, would play its part in Scott's death. For Amundsen – who has been coined the first 'professional polar explorer' – there were no such distractions. He was leading a raid with one clear goal, to reach the South Pole. Everything he and his team did was with this objective firmly in mind. Science, as he said: "…would have to look after itself."

The ship that was to transport Scott and his men to the Antarctic was the Terra Nova and a stopover in New Zealand offered one of the final chances to ensure it was adequately stocked for the expedition. The party were not to be reliant on dogs (although they would take 33) but instead rely on ponies and three newfangled motor sleds, which Scott hoped would aid them but was another area of the party's scientific discovery. The sleds had been tested and proven to work, but not in conditions comparable to those in the South Pole. There were other transport problems as well; one of Scott's men, Captain Oats, was horrified when he saw the state of the 19 ponies. They were quite old and four of them were discovered to be lame and put down. On 29 November 1910, the ship set sail for Antarctica and on 4 January landed at a base – not Scott's old Discovery headquarters on the tip of Ross Island, but ten kilometres (six miles) further along on a headland that he named Cape Evans, after his second-in-command. While unloading, the largest motor sled fell through the ice and was lost forever in the freezing-cold water below. It would not be the last misfortune the party suffered.

In direct contrast, Amundsen's team had staked their mission's success on dogs - 100 North





Norwegian flag
The race for the South Pole wasn't just between two men but two countries. Norway only became an independent country in 1905, so for a Norwegian to plant a flag at the South Pole was a great matter of pride.

Fur clothing
Amundsen was known as the first professional polar explorer and in planning for the journey studied the clothing of the Inuit. His team's fur clothing helped in the freezing conditions.

Boots
Amundsen's team was comprised of excellent skiers, even including champion skiers. The boots would fit into the skis and his men would keep pace with the huskies.

Huskies
The Norwegian was well aware of the importance of huskies. Amundsen took a large team of huskies to pull their supplies, rather than the more labour-intensive manhauling.

Exploration history

1903
Led a team of six men on the first expedition to traverse Canada's Northwest Passage between the Atlantic and Pacific oceans.

1910
Planned his ultimately successful trip to the South Pole but he was not finished exploring.

1918
Two-year expedition to explore the undiscovered areas of the Arctic Ocean.

ROALD AMUNDSEN

1872-1928

Brief Bio

Born to a family of Norwegian shipowners and captains in Borge, his mother wanted him to avoid the family maritime trade and encouraged him to become a doctor, a promise that Amundsen kept until his mother died when he was 21. He quit university and joined the Belgian Antarctic Expedition in 1897 as first mate. He led the first team to reach the South Pole and continued exploring afterward. Amundsen disappeared on 18 June 1928, while flying on a rescue mission in the Arctic.

Roald Amundsen at the South Pole in 1911

Greenland sled dogs, to be exact. As Ronald Huntford explains in *Race for the South Pole*, their ship Fram was: "...a floating kennel. One hundred Eskimo dogs were draped about the ship... the 19 men on board pandered to their every whim for the animals were the key to their enterprise." The Norwegians had gotten these animals from Greenland as they were thought to be the best for these conditions and planned to run sled dogs with men behind them on skis. Amundsen had studied Inuit culture and picked up tips on how they travelled and dressed.

Scott had a different approach to exploration. While it would be grossly unfair to paint him as out of touch regarding exploration – and the use of motor sleds showed his willingness to innovate – his approach had more than a touch of the old empire about it; for him a successful journey would be made with the attributes of hard work, a stiff upper lip, strong leadership and British strength in adversity. This is illustrated in the attitude to men hauling their equipment rather having it pulled by dogs – this was seen as more 'heroic'. He mostly chose Naval men for his expedition, rather than those with Antarctic experience.

It was, in spirit at least, an 'old-fashioned' adventure – his rival saw it more as a professional mission and recruited for the job accordingly, by getting the best dogs and most experienced men, skiers and dog handlers possible.

The two rivals initially followed similar paths to the South Pole – after unloading and building their winter accommodation they both started preparing for the race ahead by laying depots along the early parts of the route before winter set in and made passage even more treacherous. These depots contained food and fuel for the return journey to limit the amount of kit the parties would have to set off with. They both settled in for the winter months, refining the plans they hoped would ensure their names lived forever in the annals of heroic Antarctic explorers, but in some respects, their preparations differed.

Due to his expedition's scientific slant, Scott's men carried out several other mapping and geological missions and there was another, more specific mission: to find and bring back an Emperor penguin egg. This had never been

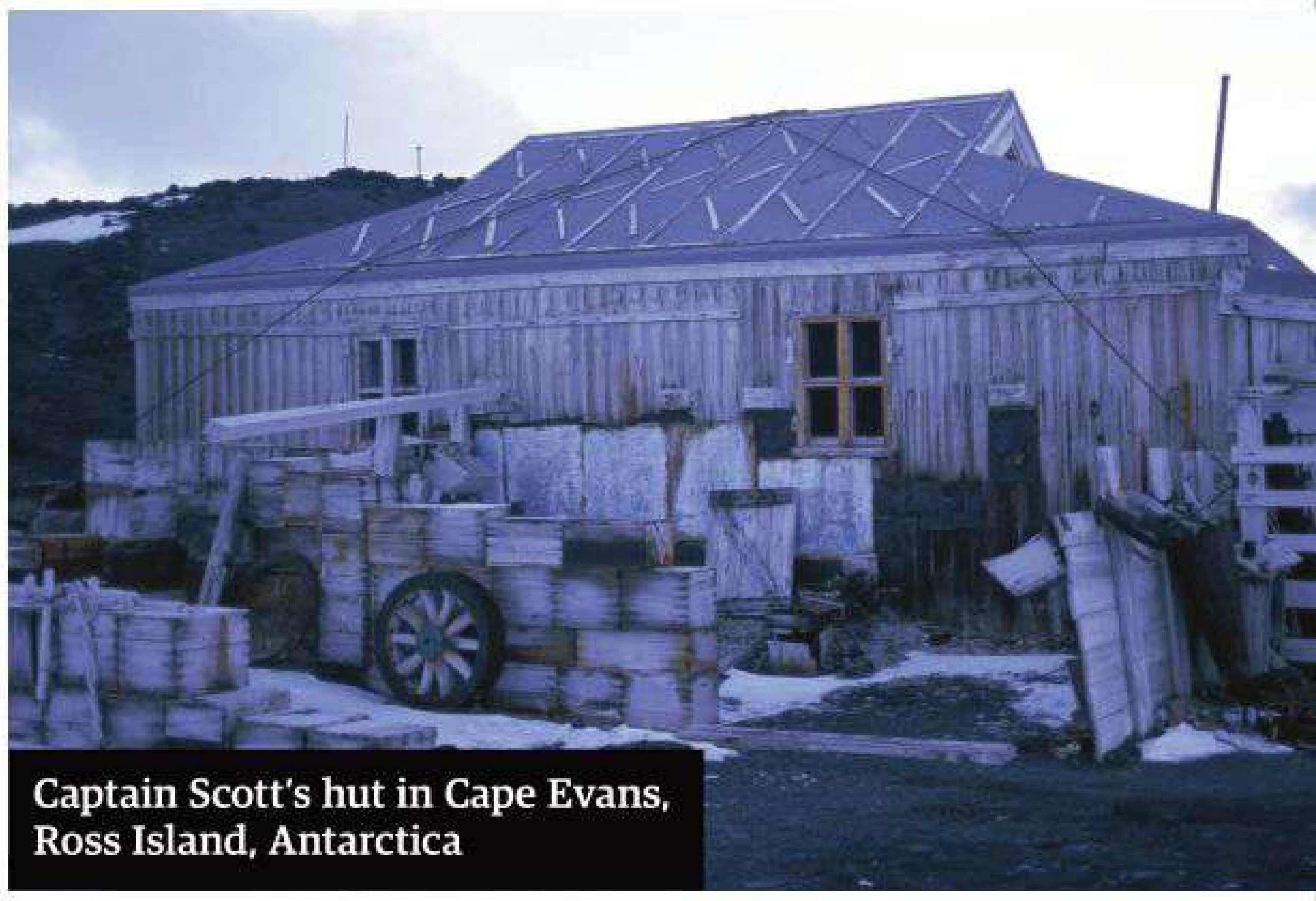
15 December 1911

So we arrived, and we were able to raise our flag at the geographical South Pole. Thanks be god! The time was 3pm when this happened.... Tomorrow we will go out in three directions to circle the area around the Pole. We have had our celebratory meal - a little piece of seal meat each. We leave here the day after tomorrow with two sleds. **R A**

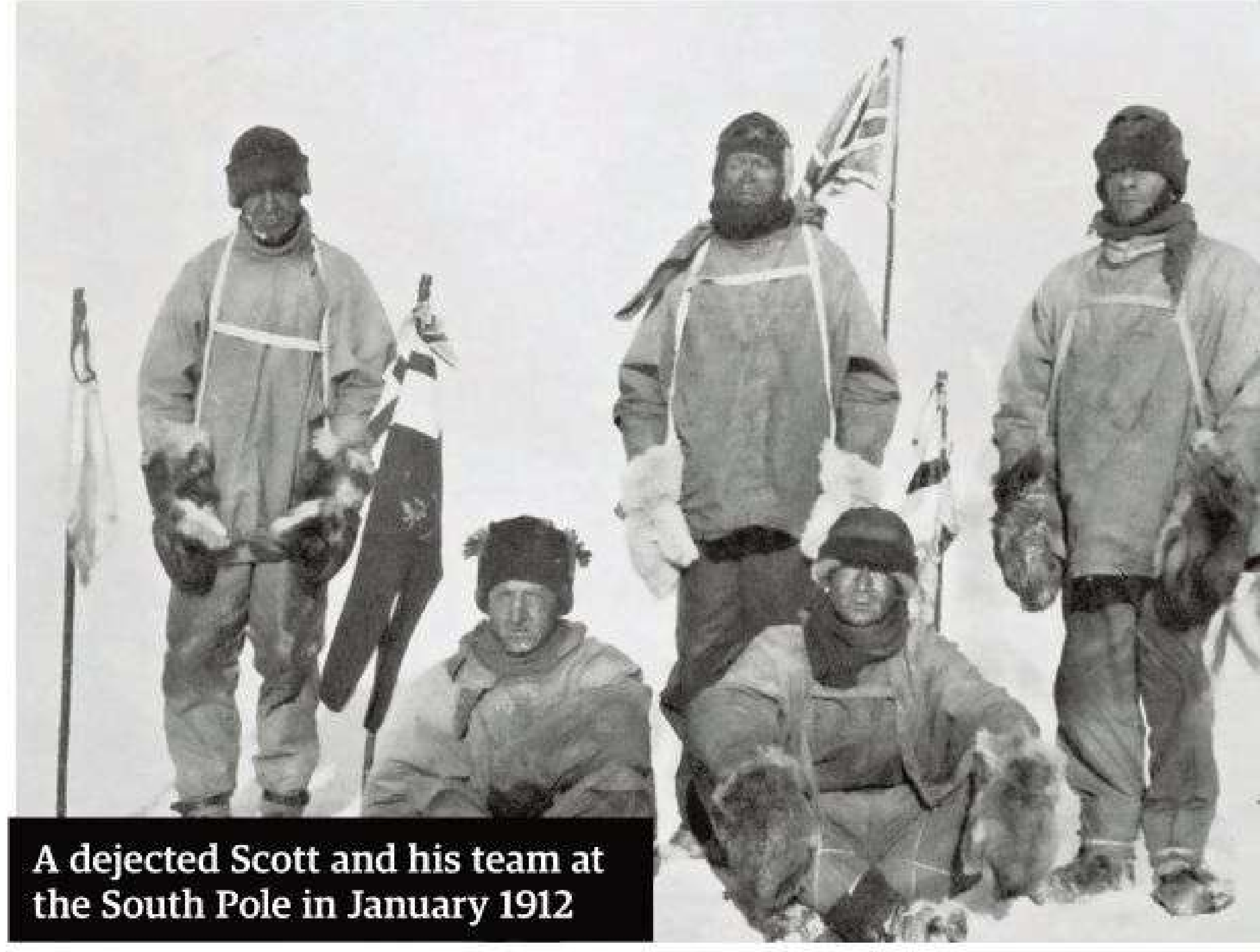
Amundsen and his crew in Alaska, aboard the Norwegian ship that was the first to navigate solo through the Northwest Passage in 1903-1906

Scott's hut

The hut was actually elaborate, with space for 27 inhabitants. The space was divided by a wall into two sections; one for officers and gentlemen and another for the men. Pride of place was given to the fully equipped darkroom. The inside was lit by gas and there was a stove and cooking range. The toilets were situated in front of the hut – again divided in terms of officers and men. Activities to pass the time included moonlight football, lectures on topics such as 'horse management', killing and skinning ponies and scientific endeavours.



Captain Scott's hut in Cape Evans, Ross Island, Antarctica



A dejected Scott and his team at the South Pole in January 1912

achieved before and on 27 June 1911, a three-man expedition set off from base camp.

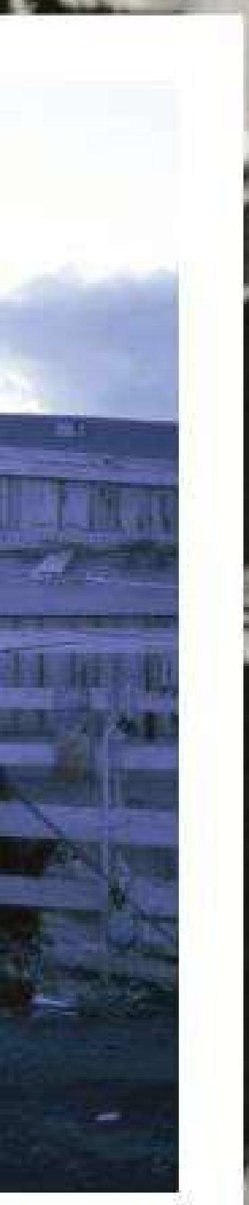
The men had to pull two sleds of food, fuel and equipment to reach the penguin's breeding colony at Cape Crozier, 112 kilometres (70 miles) away and ended up getting lost. The trio eventually found the colony and returned five weeks later with three eggs. Scott called it "one of the most gallant stories in Polar history", but others have questioned whether – despite the noble intentions – the time might have been better served preparing for the trek to the South Pole. The expedition eventually brought back over 40,000 different specimens and their research produced 15 volumes of bound reports. Scott's was indeed not just a mission to be first to the South Pole.

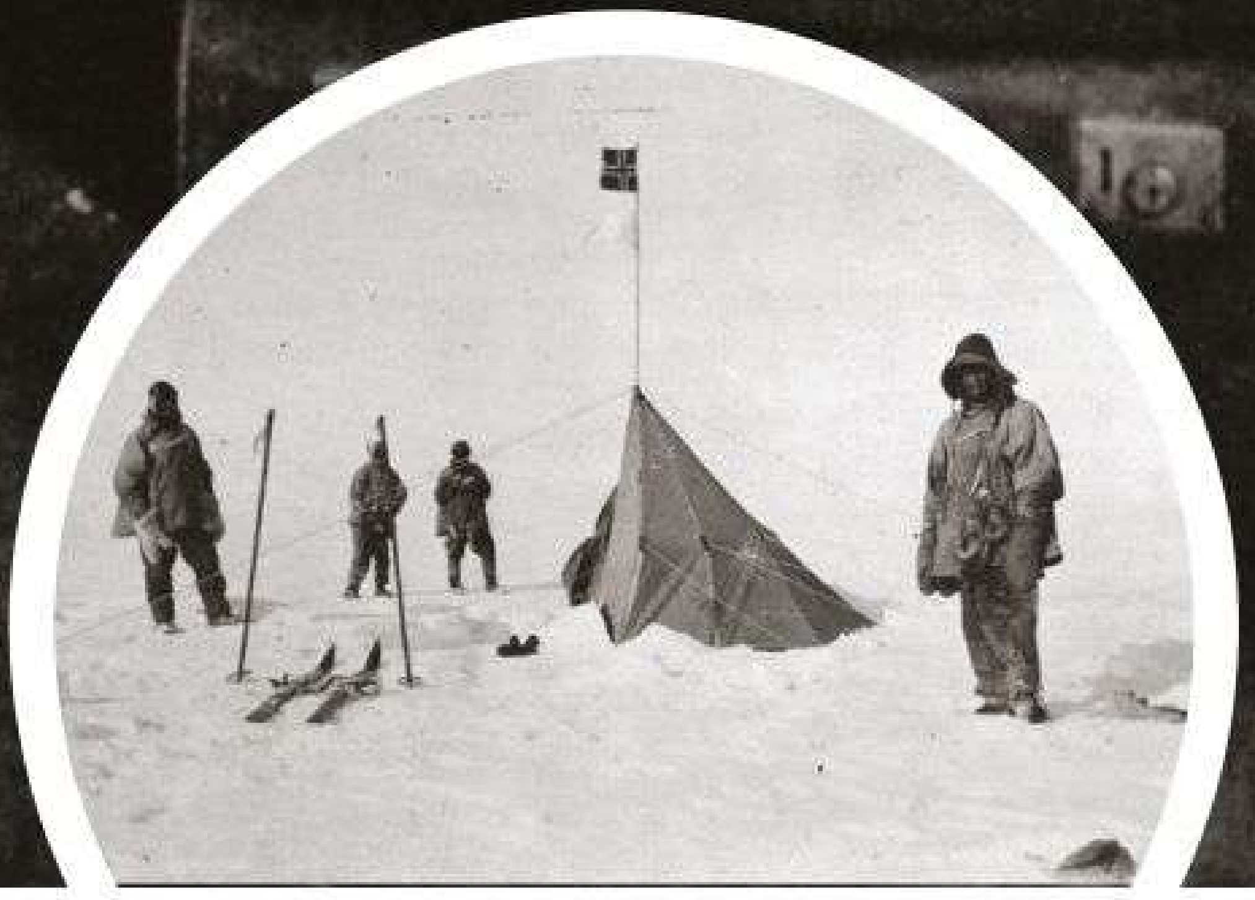
Bunkered down in his hut, Scott had been revising his plans all winter and when Lieutenant Evans, his second in command, was away checking on depots he announced his plan. In Catherine Charley's *South Pole*, she speculates that this was because Evans was the only man Scott feared would stand up to him, but there is no evidence to support this. The Englishman's plan was to leave on 3 November and he calculated that the 2,460-kilometre (1,530-mile) round trek would take 144 days. Four types of transport would be used – man hauling, ponies, dogs and the motorised sleds – but Scott wanted to rely on ponies and man hauling. A party of men would travel past the Beardmore Glacier before three men would continue the final leg of the journey to the South Pole with Scott. Some of the men felt that the plans were optimistic and hadn't planned for any contingencies. Indeed, the scientist George Simpson wrote in his diary: "There is little margin and a few accidents, a spell of bad weather, would bring not only failure but also very likely disaster." Whatever the individual thoughts of the men, the plan was settled and the race could begin.

The team were split into different groups that set off at staggered times in what was the Antarctic summer – the sun now lived above the horizon. Evans was in charge of one party that had the two motorised sleds and Scott was shocked when his party came across them lying abandoned on the ice, collecting snowflakes. A note left by Evans explained that the sleds had broken down and could not be repaired so his party had continued, hauling their supplies manually. To make matters worse, it became apparent that the ponies were not suited for the conditions. Amundsen's party suffered no such difficulties. They had set off in a smaller group of five and all of them were experienced skiers and dog drivers. In contrast to Scott, Amundsen had also allowed a generous provision of supplies, meaning they had a good safety margin.

The conditions both parties encountered was frequently horrific – there was a reason no other exploration group had reached the South Pole before. There were times when the visibility was so bad they couldn't see anything in front of them. The sun never set and the light this generated and reflected off the snow was very intense. The average temperature reached -50 degrees Celsius (-58 degrees Fahrenheit) with -21 degrees Celsius (-6 degrees Fahrenheit) the norm, and the wind ripped unmercifully around them.

With his group just 240 kilometres (150 miles) away from their objective, Scott changed his mind about this final party. He would now take four men with him, rather than three, with the extra man being Lieutenant Bowers. This move has been used as a stick to beat Scott with. The party now had four men but the food had only been rationed for three, which even then had little margin for error. The party had gained another experienced





18 January 1912

We have just arrived at this tent, two miles from our camp, therefore about 1 1/2 miles from the Pole. In the tent we find a record of five Norwegians having been here … We have turned our back now on the goal of our ambition and must face our 800 miles of solid dragging – and good-bye to most of the day-dreams! **R S**

navigator but at what cost to their food supplies? With the decision made Scott and his four men set off, walking stiffly against the chill wind as the rest of the party headed the other direction, back to the to the team's base camp and safety, if not immortality. Over a week after separating, on January 9, Scott's party reached and then beat Shackleton's record of proximity to the Pole. Scott had beaten one of his great rivals, but there was another one, much more dangerous, making his way metronomically towards the target.

Scott didn't know it but Amundsen had beaten Shackleton's record exactly a month before him. His men were feeling the conditions, their dogs were getting hungry and dangerous – they had to be wary at night-time that the animals didn't attack them – but they were close. As they moved towards their goal tensions were high – would they see Scott's party returning triumphant? They did not. On 15 December 1911, after extensively consulting their compasses, Amundsen and his men shook hands in silence and then drove the Norwegian flag deep into the ground. The group didn't want anyone to question what they had achieved. They set off to a place which Amundsen's calculations concluded was the true Pole (later research would show he was just 200 metres (660 feet) off – a fantastic bit of navigating) and pitched a tent in which they left anything they didn't need. Amundsen set another flag outside their camp on the route the British would later cross, and wrote two letters and his diary. In his journal he wrote: "Farewell dear Pole. I don't think we'll meet again."

Never had a flag caused such a devastating impact on a group of weary men. The flag that Amundsen had planted was like a dagger slid into their ribs as the men stood motionless among the dogs' paw prints which were still dotted around in the snow. The troops were disconsolate but Scott insisted that they finish their journey and plant a British flag. They reached Amundsen's tent and found a letter addressed to Scott. It read: "As you are probably the first to reach the area after us I will ask you kindly to forward this letter to King Haakon VII. If you can use any of the articles left in the tent please do not hesitate to do so. With kind regards. I wish you a safe return."

After grabbing some of the Norwegians' warm clothing and hoisting the British flag aloft, they began to contemplate the return journey. They had to cover 1,290 kilometres (800 miles),

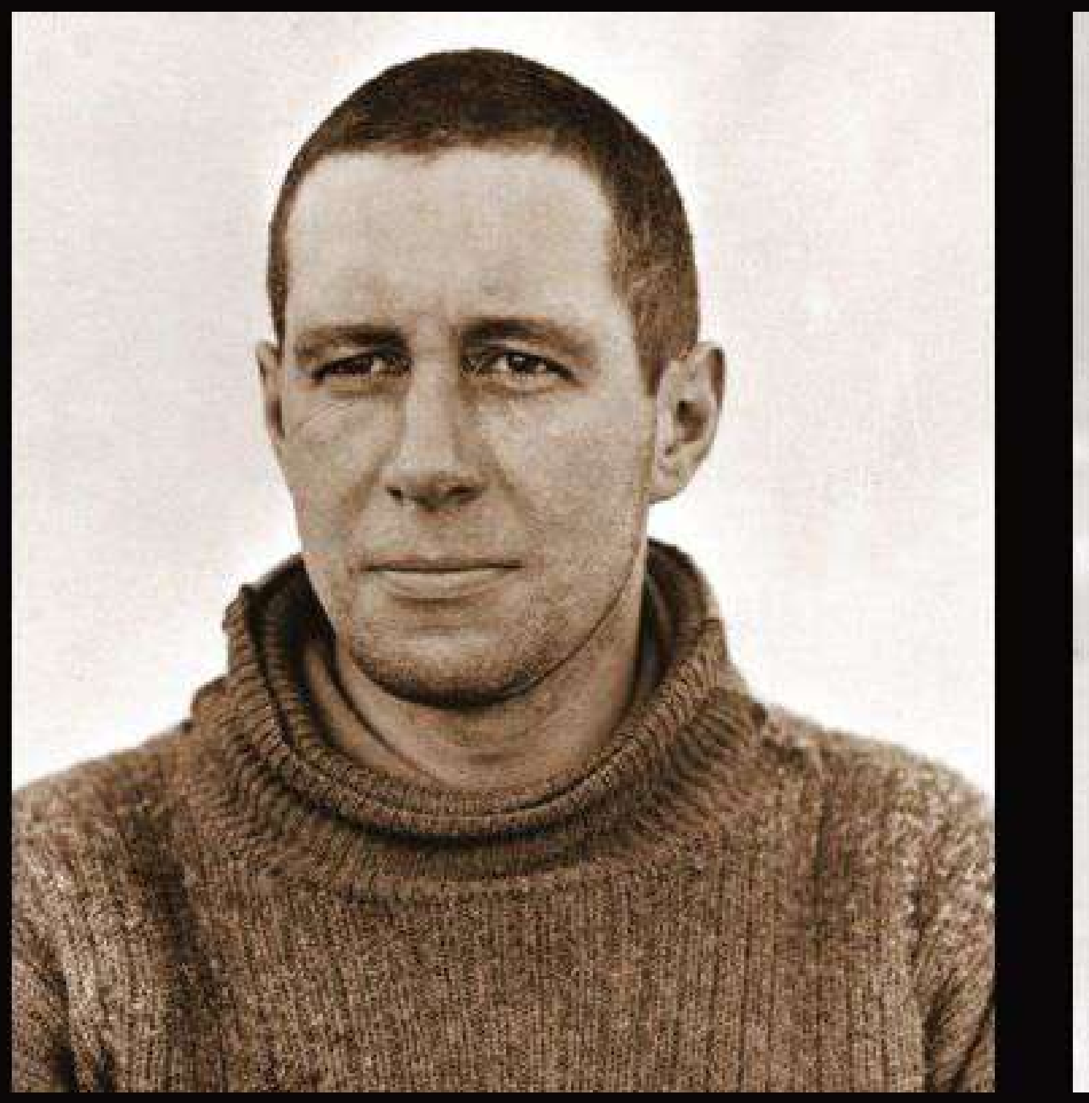
“I may be some time” – These were Scott’s men

Dr Wilson

British 1872-1912

Chief of the scientific staff

Wilson travelled with Scott on his Discovery mission. He also led the mission to retrieve an Emperor penguin egg.



Captain Oates

British, 1880-1912

In charge of ponies and mules

Oates sacrificed himself when he left his companions and walked into the elements as he knew he was slowing them down.

Lieutenant Bowers

British, 1883-1912

Commissariat officer

Although Scott was not initially impressed by Bowers he proved himself to be a skilled organiser.

Petty Officer Evans, RN

British, 1876-1912

In charge of sledges and equipment

A giant of a man, Evans was responsible for all the equipment including the sleds, sleeping bags.

dragging their sleds themselves. Using a pole from Amundsen’s flag, they attached a sail to their sleds and headed off into the distance, desperately hoping that a strong wind would catch the sail and propel them onward. As the weeks went on, the men experienced frostbite and it was clear they were slowly starving to death.

Their mission to make it to the South Pole had failed but, incredibly, Scott wasn’t prepared to also give up the trip’s scientific endeavours. He agreed that Wilson could spend an afternoon collecting rock samples to take back for scientific research. Not only did this take up time and energy but also added to the weight the team had to carry. By Saturday 17 February 1912 the group had covered 640 kilometres (400 miles) – about half of the distance – and were showing serious signs of injury and fatigue, with Evans the worst. His fingers were suffering from frostbite and he collapsed, feeling sick and giddy. He got up again but when the group set off they consistently had to wait for him to catch up – on one occasion Scott went back to retrieve him and found him crawling in the snow, He died soon afterward, the first of the party to not make it back to base camp.

There was no time to grieve. If they were to survive they had to keep moving, living from food depot to food depot. At this point they were travelling approximately 11 kilometres (seven miles) and walking for nine hours a day. Oates had frostbite in his feet that were turning to gangrene. He cut a slit in his sleeping bag and slept with his feet outside; he couldn’t cope with the agony of his feet unfreezing and then freezing again. He knew he was holding up his companions and so one night moved to the entrance of the tent, turned and said: “I am just going outside and may be some time.” They watched him limp off into the surrounding snow, all knowing they would never see him again.

7 March 1912

Arrived at Hobart at 11am. Went ashore with the doctor and the harbourmaster. Booked into the Orient hotel. Was treated like a tramp – my peaked cap and blue sweater – given a miserable little room. Immediately visited the Norwegian consul, McFarlane, and was very warmly received by the old gentleman... Thereafter telegraphed the King. **R A**

Scott himself could now hardly walk and while Wilson and Bowers thought they could make it to the next food depot, the three men stayed together in the tent as a storm blew wildly around them outside. If their rival hadn’t believed the lies of the men who claimed to have made it to the North Pole and changed his target, it has been speculated Scott and his men could have survived – they were a mere 18 kilometres (11 miles) from the next food depot. Would knowing they had reached the South Pole first have given them the heart and strength needed to carry on? Still, the three men waited to die in their tent and wrote notes; Wilson and Bowers to their families and Scott to the press, his family and sponsors. He also wrote his last diary entry.

29 March 1912

Every day we have been ready to start for our depot 11 miles away, but outside the door of the tent it remains a scene of whirling drift. I do not think we can hope for any better things now. We shall stick it out to the end, but we are getting weaker, of course, and the end cannot be far. It seems a pity, but I do not think I can write more. **R S**

As the sun reappeared for the next Antarctic summer, a search party spotted the top of Captain Scott’s tent pole peeking out of the snow. They found Scott and his men, their letters, diaries and photos. The tent was almost completely covered; one other bout of heavy snow before the search party reached the tent would have covered it, with the fate of the men – and their own private words and thoughts – lost to the ages. After singing *Onward Christian Soldiers*, Scott’s favourite hymn, they built a cross, placed it on the tent and then left it to the conditions.

The British expedition had failed through a combination of poor planning, skewed priorities and plain bad luck, but the courage and self-sacrifice the men showed until the bitter end has proven to be inspirational. A cross still stands near the beach by Cape Evans in memorial to the men. The final words are: ‘To strive, to seek, to find, and not to yield.’ Whatever his faults, the gentleman explorer encompassed all of those fine ideals.

Traversing the Northwest Passage

Before the race to the South Pole, Amundsen led the first successful expedition across Canada's once hypothetical Northwest Passage

In 1903, Roald Amundsen and his crew of six men set out on a three-year-long voyage, navigating the famous sea route connecting the northern Atlantic Ocean and Pacific Ocean, which was yet to be traversed without death and disaster. They journeyed in Gjøa, Amundsen's small, 47-ton fishing boat, which he believed would be pivotal to their success, through its ability to sail in shallow waters and their planned route that kept them close to the coastline.

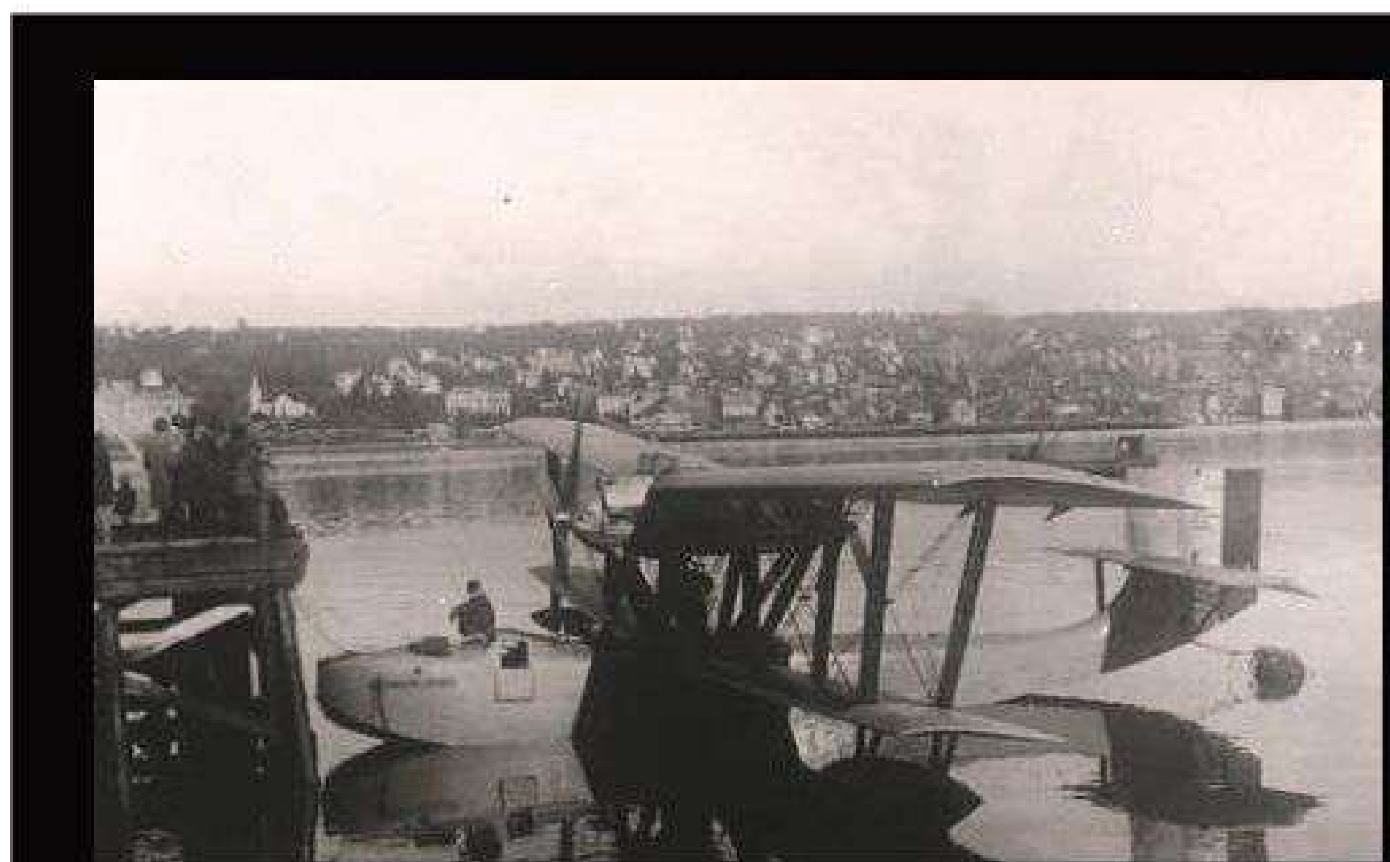
The crew departed from Christiania, (present-day Oslo) on 16 June, heading straight for the west coast of Greenland. From there they sailed across Baffin Bay in the northern Atlantic Ocean, before anchoring on Beechey Island, part of a Canadian archipelago. It was here, in the mid-19th century, that British explorer Sir John Franklin camped with his men on his own ill-fated search for the Passage. After a day or two there, Amundsen's ship voyaged on down the Franklin Strait, named after the doomed navigator, and anchored on the south east corner of King William Island.

Amundsen was the greatest polar explorer of his time and is recognised as the first person to reach both poles

Gjøa, Amundsen's ship, anchored at Gjöahavn, where the crew spent almost two years living with Inuit people

Amundsen and his men christened the small harbour into which they'd sailed 'Gjöahavn', known today as Gjöa Haven. They stayed there for almost two years, through the winters of 1903 and 1904, conducting magnetic work and various experiments, including a major sledge expedition to uncharted northern regions in the spring of 1905, which covered over 800 miles. Over their time there, Amundsen was also able to collect enough scientific data to locate the North Magnetic Pole, although he was unable to physically reach it on land. While on the island, the explorers spent much of their time among the local Inuit people, learning their ways of surviving in the extreme Arctic environment, including travelling lightly and using dog sleds. This tutelage later proved to be invaluable for Amundsen, in his subsequent and successful expedition to the South Pole.

Gjøa and its crew finally left the island in August 1905, passing Cambridge Bay, on the west coast of Canada's Victoria Island, and continuing to sail south. They spent their third and final winter at King Point, on the north coast of Canada, and were then subsequently grounded at Herschel Island for almost a month, due to the icy conditions. They made their escape in August 1906 and reached the city of Nome in Alaska on 31 August 1906, where their arrival marked the completion of the first successful voyage of the Northwest Passage. In his diary, Amundsen wrote: "My boyhood dream - at that moment it was accomplished. A strange feeling welled up in my throat; I was somewhat over-strained and worn - it was weakness in me - but I felt tears in my eyes."


Latham 47, which Amundsen was flying in, during his 1928 rescue mission to save Umberto Nobile

The disappearance of Roald Amundsen

Following the success of his voyage to the Northwest Passage, Amundsen continued to embark on challenging expeditions in extreme conditions during his lifetime, including trips to the Northeast Passage, the North Pole, and the South Pole. In 1926, he and a crew of 15 other men, including Umberto Nobile, an Italian aviator and engineer, made the first aerial crossing of the Arctic in Norge, an airship that was designed and flown by Nobile.

Just over two years later, in June 1928, Amundsen was taking part in a rescue operation in the Arctic when the plane he was in disappeared. He and a crew, including the famous Norwegian pilot Leif Dietrichson, were trying to find crew members of Nobile's airship Italia, which had been wrecked upon its return from the North Pole. A final radio message had been picked up from Amundsen's craft that day, but only silence followed. Parts of the plane were found off the coast of Tromsø, in Norway, and it is believed to have crashed due to the foggy weather, somewhere over the Barents Sea. The wreckage of the craft was never found, nor were the bodies of Amundsen and his fellow men.

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Conquering Everest

Edmund Hillary's Climb to the Top

How an explorer from New Zealand became the first man in history to reach the summit of the world's highest mountain

At 11.30am on 29 May 1953, Edmund Hillary and his Nepali Sherpa companion Tenzing Norgay stood at 8,848 metres above sea level and finally stopped to survey the view: one that nobody had seen before. The two were the first to reach the summit of Mount Everest, the highest mountain in the world. Standing proud among the Himalayas, bordered by Tibet and Nepal, the mountain had defeated all previous attempts to conquer it. Hillary's expedition companions Tom Bourdillon and Charles Evans had, just days before, come within 100 metres of the top, but been forced to turn back. Hillary would graciously credit his triumph as a team effort, praising Bourdillon and Evans's work in clearing the path. However, the first foot on the highest point on Earth was his.

Everest was so named in 1865 by the Royal Geographical Society, after the Surveyor General of India Sir George Everest. The mountain is known in Nepal as Sagarmāthā and in Tibet as Chomolungma, and Sir George actually protested the tribute as it was a name that couldn't be pronounced in or translated into Hindi. It stuck whether he liked it or not. High winds, low oxygen, ice falls, avalanches, freezing temperatures and blizzards make it a treacherous climb, but Clinton Thomas Dent, then president of The Alpine Club, mused that it was possible in 1885. It would be 68 years before he was proved correct.

Several attempts preceded the successful Hillary expedition. George Mallory and Guy Bullock led an exploratory mission in 1921, discovering the northern route from Tibet (the approach from the south east in Nepal is considered 'standard', if hardly easy). George Finch was the first to attempt the climb with bottled oxygen the following year, making good progress to 8,320 metres – the highest a human had ever officially climbed – before turning back. Mallory also tried again in 1922, and once more in 1924: his final climb from which he and his partner Andrew Irvine never returned. Mallory's body was only discovered in a snow basin on the North Face in 1999.

Hugh Ruttledge made two unsuccessful assaults on the North Face in 1933 and 1936. After China closed access to Westerners from Tibet in 1950, Bill Tilman tried the south-east route later that year. Sherpa Tenzing and Raymond Lambert achieved a new altitude record of 8,610 metres during Edouard Wyss-Dunant's Swiss expedition of 1952. That experience would make Tenzing indispensable in 1953.

The expedition on which Hillary and Tenzing made history was the ninth British attempt on Everest, and was led by the British Army Colonel John Hunt. Having received the Distinguished Service Order for his conduct as a lieutenant colonel during World War II, Hunt had taken up a position at the Supreme Headquarters Allied Expeditionary Force, when he received the invitation from the Joint Himalayan Committee of the Alpine Club and the Royal Geographic Society.

His experience of military leadership coupled with his climbing credentials (he'd been part of a search for the Yeti in the Himalayas in 1937) made him an obvious choice, although some were surprised that he was chosen over and above Eric Shipton, who had led an unsuccessful climbing party on Cho Oyu the previous year. Many of Hunt's Everest climbers, including Hillary, were veterans of the Cho Oyu trip.

The team that Hunt ended up leading consisted of medical men Michael Ward, Griffith Pugh

The ten attempts that preceded Edmund Hillary, and the reasons they didn't make it to the top

1922

Climbers: Charles Granville Bruce, Edward Lisle Strutt, George Mallory, George Finch, Geoffrey Bruce
Why they failed: After three attempts, an avalanche killed seven Sherpa climbers. Their's were the first recorded deaths on Everest.

1924

Climbers: George Mallory, Andrew Irvine, Edward Norton
Why they failed: Mallory and Irvine disappeared during a push for the summit. Mallory's body wasn't found until 1999.

1933

Climbers: Hugh Ruttledge, Lawrence Wager, Percy Wyn-Harris, Eric Shipton, Frank Smythe
Why they failed: Wager and Wyn-Harris missed the route they'd intended to take and turned back in poor snow conditions. Shipton turned back due to illness.

1935

Climbers: Eric Shipton, Bill Tilman, Charles Wigram, Edmund Wigram, Tenzing Norgay
Why they failed: They didn't – this was just reconnaissance and the summit wasn't attempted. They correctly identified the Western Cwm as a possible route.

1936

Climbers: Hugh Ruttledge, Bill Tilman, Frank Smythe, Percy Wyn-Harris, Dan Bryant
Why they failed: Unusually early monsoon conditions scuppered Ruttledge's second attempt. His team only just survived an avalanche.

1938

Climbers: Bill Tilman, Eric Shipton, Frank Smythe, Noel Odell, Peter Lloyd
Why they failed: Climbing without supplemental oxygen, this team was forced to abandon the attempt due to sickness and bad weather.

1947

Climbers: Earl Denman, Tenzing Norgay, Ang Dawa
Why they failed: An unofficial expedition and an illegal entry into Tibet, this attempt ended when the small party was hammered by bad weather.

1950

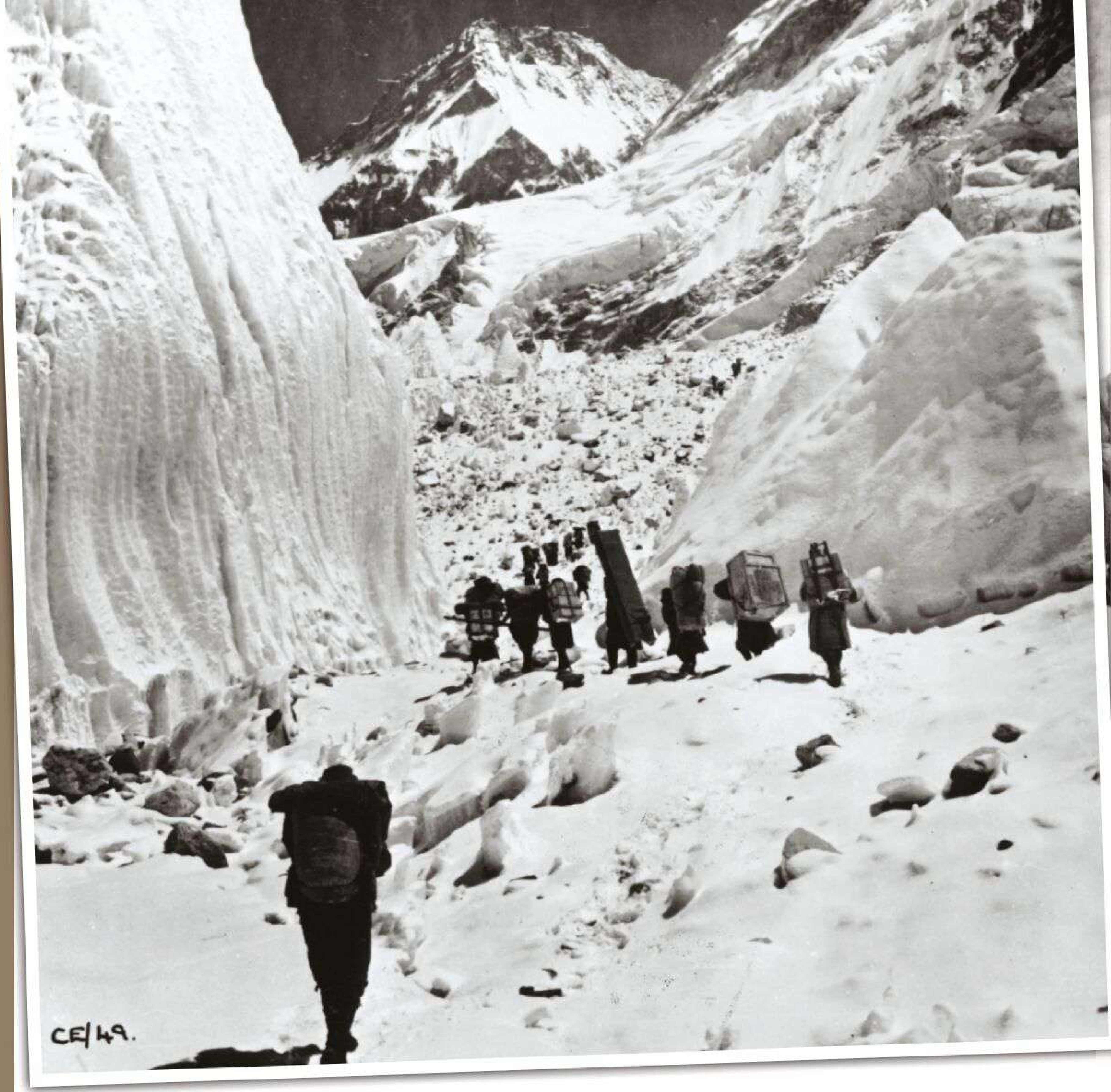
Climbers: Bill Tilman, Charles Houston, Oscar Houston, Betsy Cowles
Why they failed: As in 1935, this was just an exploratory expedition, investigating the now standard approach to Everest from the south.

1951

Climbers: Eric Shipton, Edmund Hillary, Tom Bourdillon, WH Murray, Mike Ward
Why they failed: Another survey, exploring the potential new route via the Western Cwm. An impassable crevasse ended the progress.

1952

Climbers: Edouard Wyss-Dunant, Raymond Lambert, Tenzing Norgay, Rene Aubert, Leon Flory
Why they failed: Actually two climbs. The first was reconnaissance and turned back for lack of provisions. The second was ended by bad weather.



"Most of the party returned to camp VII at the end of the ordeal, but Hillary and Tenzing pushed on"

and Charles Evans (also deputy expedition leader); scientists George Band, Tom Bourdillon and Michael Westmacott; photographers Tom Stobart and Alfred Gregory; journalist James Morris; organising secretary Charles Wylie; and two schoolmasters in George Lowe and Wilfred Noyce. They were also accompanied by 362 porters including 20 Sherpa guides – experts on the mountain terrain of Tibet and Nepal – carrying 10,000 pounds of baggage. And of course, there was Hillary himself.

Hillary, a native of Auckland, New Zealand, had been an enthusiastic climber since he was a teenager, undertaking his first major climb in 1939, aged 20, when he reached the summit of the 1,933-metre Mount Ollivier in New Zealand. He had served as a navigator in the Royal New Zealand Air Force during World War II, despite his pacifist leanings, and had returned to mountaineering post war. He reached the highest peak of New Zealand's Mount Cooke (1,909 metres) in 1948 and was on a trip with his fellow New Zealander Lowe in the Alps when both learned they had been selected for Everest. With monsoons making Everest impossible for much of the year, a window of relative calm in April and May 1953 was chosen.

The expedition set up its base camp in March, and while work was ongoing, Hillary moved off alone to survey the Khumbu Icefall ahead. The journey of just a few hundred feet took him more than an hour. What he saw was, to say the least, disheartening: a thousand times worse than what he had been expecting.

As Hillary's team now began the trek in earnest, Westmacott laboriously carved a series of rough steps up the ice walls above a dizzying crevasse. The feature was named 'Mike's Horror'. Further landmarks on the treacherous path would be dubbed 'The Ghastly Crevasse', 'The Nutcracker', 'Hellfire Alley' and 'Atom Bomb Area', where Hillary almost suffered a catastrophic fall when a ledge gave way, sending him plummeting downwards. Tenzing hauled him back to safety and all was well, although Hillary's diary reveals he was understandably shaken by the experience: "I'm holding on alright – but some cracks, pretty strongly sometimes. Certainly this thing we are doing is a great test of faith."

Eventually they reached a rickety rope bridge over a terrifying icy abyss: a relic of the Swiss expedition. The Sherpas had been uncomfortably carrying aluminium builders' ladders with them

up until this point, and their purpose now became clear as the ladders were bolted together until they made a secure structure long enough to span across the crevasse. Hillary was the first to crawl over and onto the next challenge: the Western Cwm, a more-or-less flat valley, named in 1921 by Mallory and also sometimes known as The Valley of Silence.

The Cwm was much steeper than the party had expected, but must still have seemed like a welcome relief after the Icefall. There was a further treat in store too, when Hillary and Tenzing found a leftover stash of the Swiss expedition's food including cheese, bacon, porridge and jam. Nobody ate British army rations that night. They had already been on the ice for nearly a month.

Hillary's next target was the Lhotse Face, a 1,125-metre ice wall where Bourdillon's newly designed oxygen tanks would be put to their first real test. The bottom is at 6,605 metres in elevation, where it's hard enough to breathe already. The exertion of the climb and the lack of oxygen during the ascent make hypoxia (oxygen starvation), mountain sickness and cerebral and pulmonary oedema (fluid on the brain or in the lungs) an ever-present risk. Wyss-Dunant called it 'The Death Zone'.

Once again Hillary and Tenzing took the lead, forging the 'path' to South Col, the pass between Lhotse and Everest itself, hacking out extra footholds for the men braving the punishing conditions behind them, several of whom were Sherpas carrying 30-pound packs. When one Sherpa felt he couldn't go on, Wylie took his pack for him. Wylie's oxygen ran out near the top, and in an incredible feat, he made the final push, still with pack, to the apex unaided. The groundwork for the attempt at the summit laid, most of the party returned to camp VII at the end of the ordeal, but Hillary and Tenzing pushed on to establish their final camp, 460 metres further up on the summit ridge. After six weeks, the goal was in sight, but completion would require almost superhuman determination and a further few days battling largely uncharted territory. In a way, they were still only at the beginning.

Once everyone had made it to the ridge camp, it was, for a change, Bourdillon and Evans who made the first painful strike for the final South Summit approach, identifying the likely routes that would later benefit Hillary and Tenzing. They began by managing an extraordinary 300 metres an hour, but ended up battling with their malfunctioning

1953 EVEREST TEAM

The hardy team that accompanied Edmund Hillary to the top of the world

John Hunt

Expedition leader

Hunt got to know the Alps and Himalayas early in life. After World War II, he joined the Supreme Headquarters Allied Expeditionary Force, where he was invited to lead the 1953 expedition.

Tenzing Norgay

Guide/mountaineer

A Sherpa born in north-eastern Nepal, Tenzing toyed with becoming a Buddhist monk, before choosing a career as a mountaineer instead. He had previously been part of Shipton's Everest expedition in 1935.

George Lowe

Mountaineer

New Zealander Lowe began his working life as a teacher, and met Edmund Hillary while on a climbing holiday in the southern Alps.

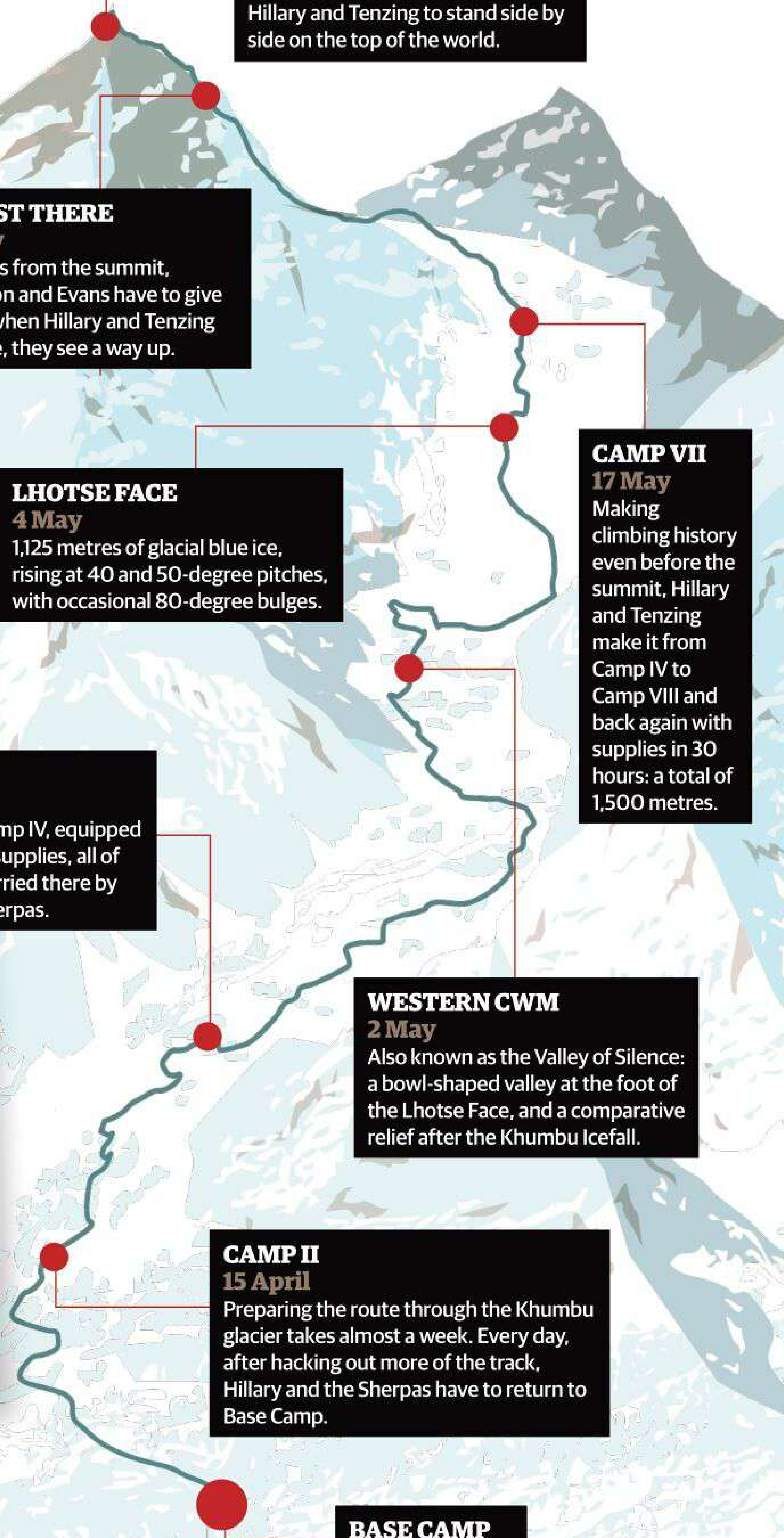
Alfred Gregory

Photographer/ mountaineer

Gregory grew up in Blackpool and began his climbing career in the Lake District and Scotland. His pictures from Everest and other expeditions were seen all over the world.

THE ROUTE TO THE TOP

It took Hillary, Tenzing and their team almost two months to complete the climb in 1953



THE SUMMIT
29 May
Only about as big as a pub pool table, there is just enough space for Hillary and Tenzing to stand side by side on the top of the world.

ALMOST THERE
26 May
91 metres from the summit, Bourdillon and Evans have to give up. But when Hillary and Tenzing get there, they see a way up.

LHOTSE FACE
4 May
1,125 metres of glacial blue ice, rising at 40 and 50-degree pitches, with occasional 80-degree bulges.

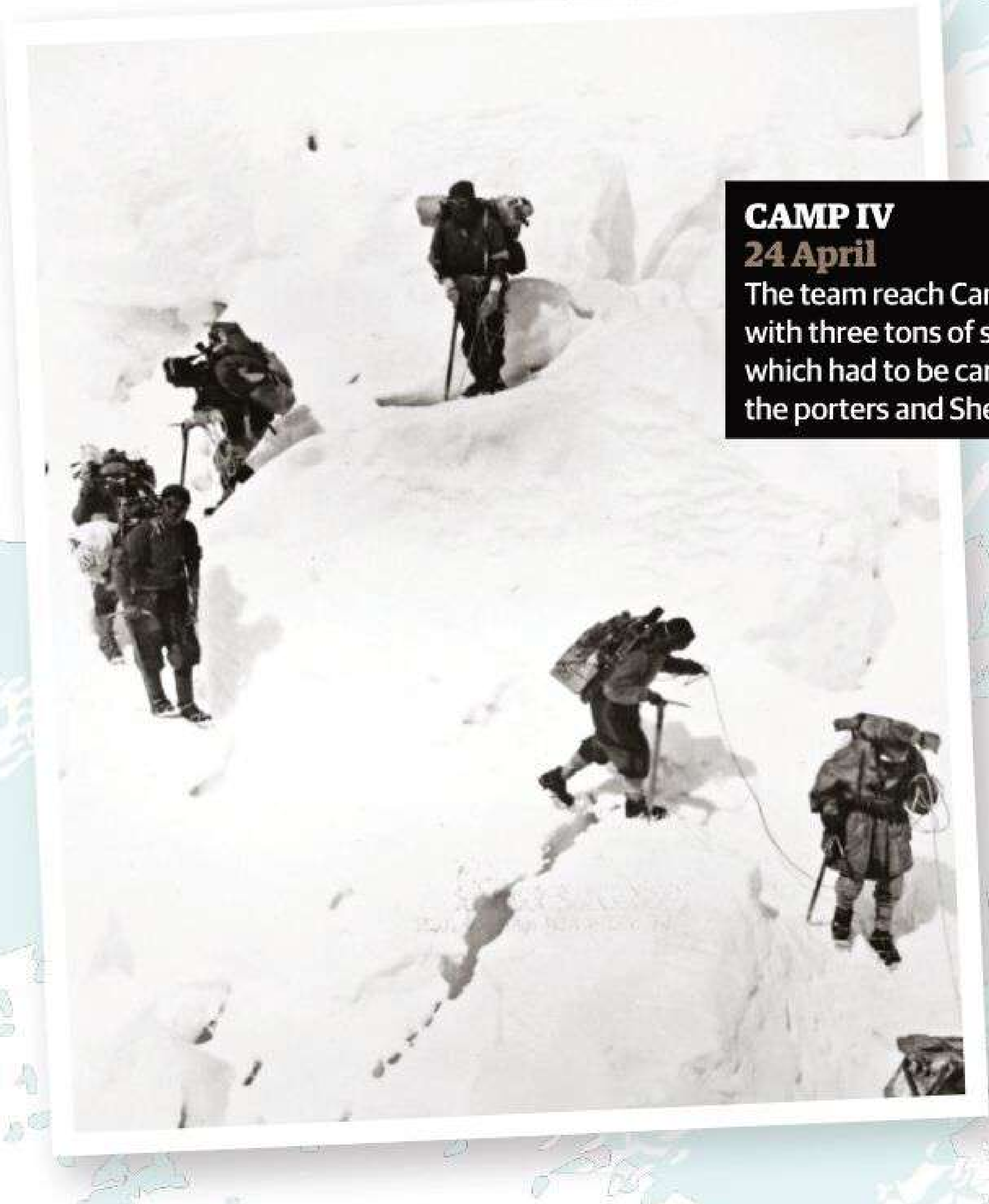
CAMP VII
17 May
Making climbing history even before the summit, Hillary and Tenzing make it from Camp IV to Camp VIII and back again with supplies in 30 hours: a total of 1,500 metres.

CAMP IV
24 April
The team reach Camp IV, equipped with three tons of supplies, all of which had to be carried there by the porters and Sherpas.

WESTERN CWM
2 May
Also known as the Valley of Silence: a bowl-shaped valley at the foot of the Lhotse Face, and a comparative relief after the Khumbu Icefall.

CAMP II
15 April
Preparing the route through the Khumbu glacier takes almost a week. Every day, after hacking out more of the track, Hillary and the Sherpas have to return to Base Camp.

BASE CAMP
12 April
After 30 days of hard slog starting from Kathmandu, Base Camp is established.



IN NUMBERS

10,000LB
of luggage carried in 1953 expedition

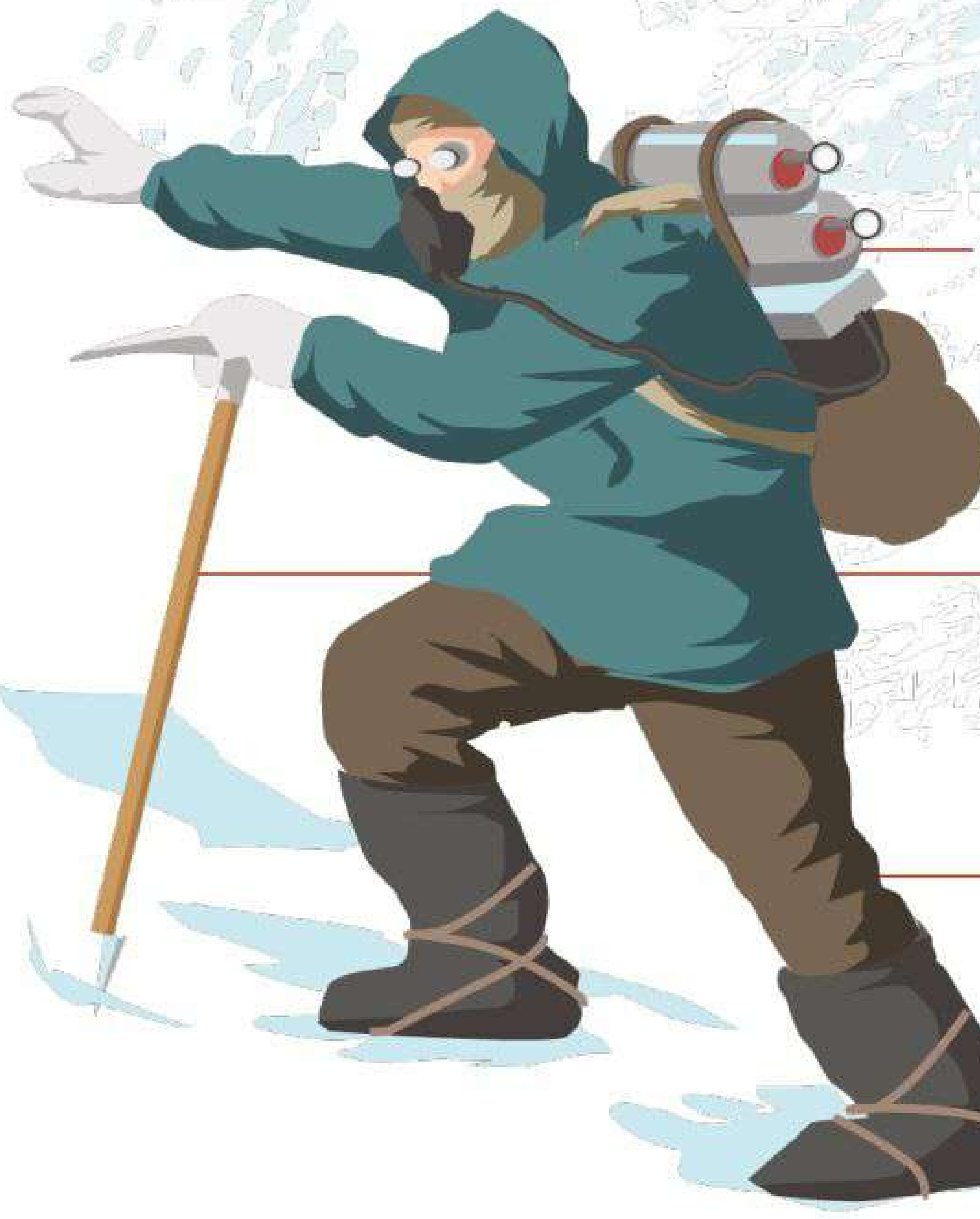
362
porters took part in 1953 expedition

200MPH
possible speed of wind on Everest

-80°C
possible temperature on Everest

33,000FT
of fixed rope is used each year on South Col

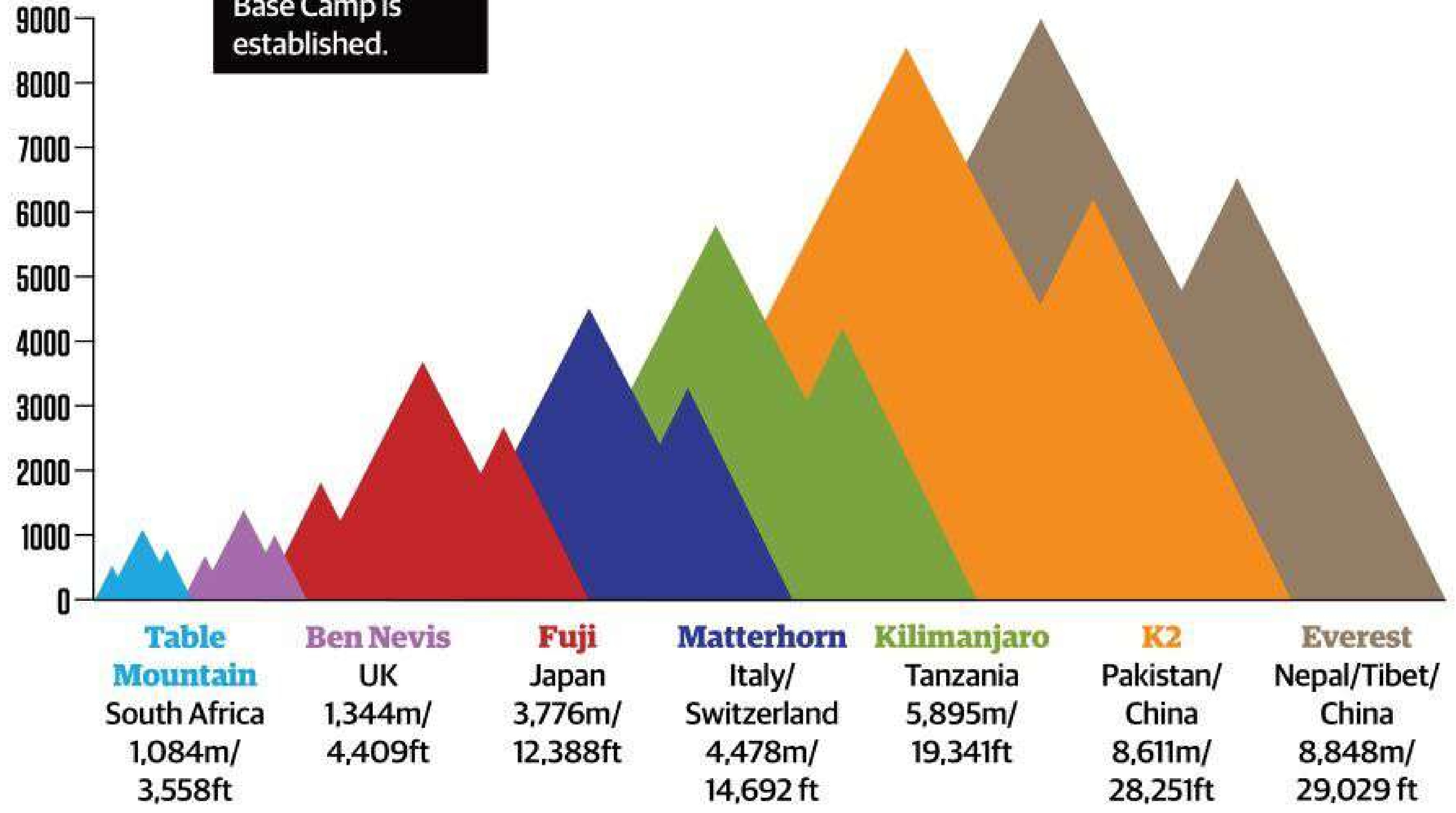
1970
was the first year that somebody skied down Everest



Breathing apparatus
Hillary's team used a closed-circuit oxygen system, which excluded the thin air of their dangerous environment.

Ice axe
The all-purpose ice axe – for hacking paths and steps, and stopping your descent if you fell – had a forged steel head.

Boots
The team's boots were designed to be as light as possible, although heavy steel crampons added to the weight.



"Had he been wrong, the result would have been a 3,000-metre fall to smash on the glacier below"

oxygen canisters (Evans told Bourdillon of a sudden choking sensation during which he felt like he was about to die. "I expect you were," was the nonchalant reply). A broken canister turned out to be the culprit, and while Evans, like Wylie, managed to carry on for a while, ultimately they had to turn back, within 100 metres of the summit. The journey back down was almost no easier than the ascent: Bourdillon lost his footing, sliding into Evans, and both men began hurtling out of control down the mountain. Both survived, but it was an unorthodox way back to camp. Hillary later admitted feeling guilty at a sense of schadenfreude at their failure. He still had the opportunity to be the first man to conquer the mountain.

That opportunity came on the morning of 27 May, the beginning of 48 hours that would cement Hillary's place in history. Tenzing too was well aware of the importance of the hours ahead, and the pair set off into the howling winds with Lowe, Gregory and the Sherpa Ang Nyima at 8.45am. They made steady progress up the South-East Ridge, but at 2.30pm, Lowe, Gregory and Nyima, exhausted, opted to turn back, leaving Hillary and Tenzing alone above the clouds. Camping for the night, Hillary made the peculiar mistake of taking his boots off. In the morning they were frozen solid and he had to 'cook' them on his Primus stove to get them on again.

After a feast of lemon juice and sardines, the pair set off at 6.30am for the final 400 vertical metres. Tenzing occasionally sank waist-deep into the snow, the pair were forced to meticulously clear loose rocks one by one and there was the constant threat of avalanche, but by 9am, the going was slightly easier. Then, at 8,809 metres, Hillary saw a way to the top: incredibly dangerous, but possible. A cornice of ice on the Kangshung Face, already beginning to detach, looked like it might take his weight and allow a wriggle to the top. Had he been wrong, the result would have been a 3,000-metre fall to smash on the glacier below. He wasn't. Hillary set foot on the summit of Everest at 11.30am, joined shortly thereafter by Tenzing. It was just big enough for the two of them to stand side by side. In an unusual display of emotion, the pair took off their oxygen masks and hugged. They planted some flags, buried some 'offerings' – Tenzing some sweets and a pencil belonging to his daughter, Hillary a small cross – took some photographs and, after just 18 minutes, began their quick but scary descent. They arrived back at the South Col camp at 4pm. "Well," Hillary said to Lowe on arrival, "we knocked the bastard off."

News of the triumph reached Britain on the same day as Elizabeth II's coronation on 2 June. Copious awards and honours awaited the whole team in the aftermath of the momentous event, from the governments of Britain, India and Tibet.

In the years afterwards, Tenzing became the first director of field training at the Himalayan Mountaineering Institute in Darjeeling, and went on to found his own trekking company, Tenzing Norgay Adventures.

Hillary, meanwhile, continued his own adventuring, reaching the South Pole on foot in 1959, and the North Pole by plane in 1985. He became the first person in history to stand on the summit of Everest and at both poles. He also devoted his life to philanthropy, in particular to helping the Sherpa people, building schools and hospitals in Nepal through the foundation of the Himalayan Trust.

While on top of Everest, he said later, "I looked across the valley towards the great peak Makalu and mentally worked out a route about how it could be climbed… It showed me that even though I was standing on top of the world, it wasn't the end of everything – I was still looking beyond to other interesting challenges."

© Alamy; Getty Images; Rex Features

Yuri Gagarin

First Human in Space

Originating from humble beginnings, Gagarin made history as he became the first earthling to escape the gravity of our planet

Hundreds of years from now, when historians chronicle the greatest achievements of humankind, Yuri Alekseyevich Gagarin's name will still loom large. For on 12 April 1961, he became the first human in space, and the first to orbit our blue planet, spending 108 minutes beyond our atmosphere before bumpily returning to Earth. It may not have been a 'giant leap' in terms of distance, reaching a maximum altitude of 177 miles, but it set alight the blue touch paper on the human exploration of space, which one day may see us build colonies on the Moon, Mars and beyond.

Gagarin had not always wanted to go into space. Flying aircraft was his true love, inspired after watching dogfights in the sky as a child during World War Two. At the age of 21 Gagarin enrolled in the Soviet Air Force, flying stubbed-nose MiG-15 fighter jets, and before long he was being recruited into an elite Soviet group of pilots training to become cosmonauts and vying to be the first human in space.

Russia stole a march on the world's other superpower of the time, the United States, on 4 October 1957 with the launch of Sputnik 1, the world's first artificial satellite which kick-started the Space Race. The USA swiftly followed up on 31 January 1958 with the Explorer 1 satellite, but the Soviet Union were always ahead, thanks in large part to the genius of their rocket engineer Sergei Korolev. Sputnik 2 took the first living being, a dog called Laika, into space and, by 1961, the Soviet Union were ready to send human beings into space.

It was risky – all manner of things could go wrong – but the Soviets knew that if they waited the Americans would beat them to it (as it happened, Alan Shepherd became the second man in space on 5 May 1961, just a few weeks after Gagarin).

The cosmonaut training that Gagarin faced, at the time an Air Force Lieutenant, was harsh. Undergoing psychological and invasive medical tests, hard physical training and practicing in centrifuges to combat the g-forces that such a flight would entail, the class of 20 was whittled down to a shortlist of six, and then just two: Gagarin and another, named Gherman Titov. Eventually, Gagarin was chosen for the mission, helped by his small stature of five-foot two-inches: his spacecraft, Vostok 1, was rather cramped.

Normally cheerful and intelligent with a winning smile, on the morning of the launch Gagarin was unusually quiet, pensive ahead of his history-making mission. He and Titov, (who, as Gagarin's back-up, was also wearing his spacesuit just in case he was called upon to fly the mission) rode out to the launch site at the Baikonur Cosmodrome, where before them stood the towering R-7 Semyorka rocket, on top of which was Vostok 1.

Crammed into what was essentially a tin-can that flew on automatic, Gagarin had nothing else to do but savour the experience. As the rocket engines

Defining moment

Selected for flight

Head of cosmonaut training in the Soviet space program, General Nikolai Kamanin informs the shortlisted cosmonauts he had recruited and trained at Star City that Gagarin had been selected to be the first man in space. This came after all the candidates underwent psychological and invasive medical tests and physical training.

10 April 1961

YURI ALEKSEYEVICH GAGARIN

1934-1968

Brief Bio

A fighter pilot for the Russian Air Force, Gagarin was born in the village of Klushino. As a teenager, Gagarin realised that he wanted to become a pilot when he witnessed a Russian Yak fighter plan make an emergency landing not too far away from his home. He joined a flying club a few years later and completed his first solo flight in 1955.

Yuri Gagarin

kicked in and began to heave the mighty craft off the launchpad, Gagarin had his own "One giant leap..." moment, bellowing "Poyekhali!" across the radio, meaning "Let's go!" in Russian. It became the unofficial motto for the Soviet Union's space programme from that moment.

As Vostok 1 cruised over the Earth, Gagarin looked down on its continents and oceans, clouds and mountains, forests and deserts, and became the first person to see our planet as a world not of individual nations, but a globe shared by all life.

Defining moment

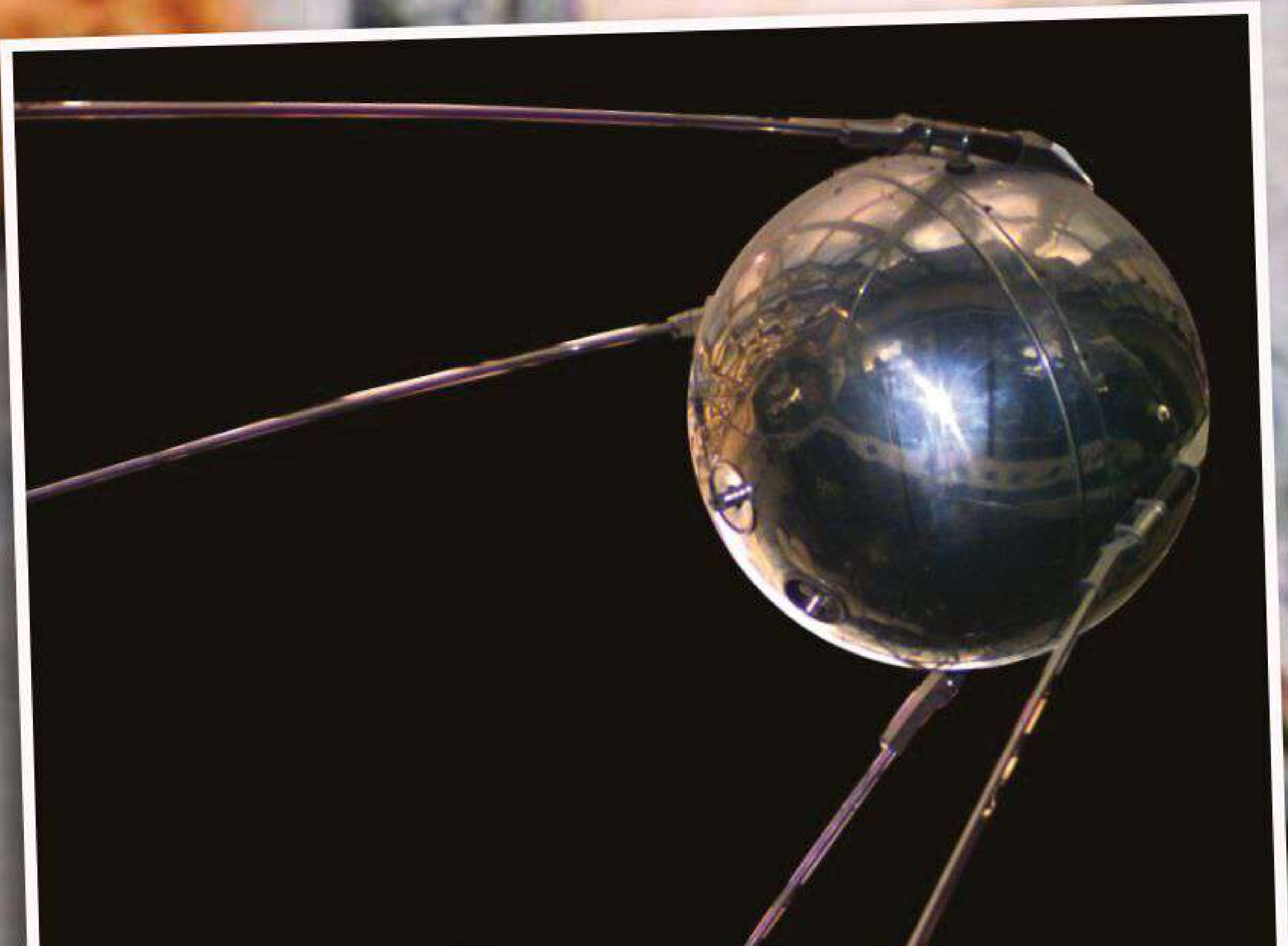
Entering space

Gagarin became the first earthling to escape the gravity of Earth on board the spacecraft Vostok 1. He orbited our planet once at a speed of 18,000mph and discovered that the Earth was in fact round with large bodies of water. He was able to look over the planet and see it as a whole living entity, instead of a combination of different states.

12 April 1961

After nearly two hours it was time to return home, but there was a problem. Vostok 1 was made from two sections, the tiny crew section that contained just enough room for his cramped seat that Gagarin was strapped into, and an cone-shaped equipment module on top. The two were tethered together with cables that were supposed to break apart when the crew section began its descent, but the cables stubbornly remained connected and, as Gagarin's capsule plummeted Earthwards, the equipment section kept clanging against his module, threatening to hamper the descent, until the heat of atmospheric re-entry burned through the cables and finally separated them.

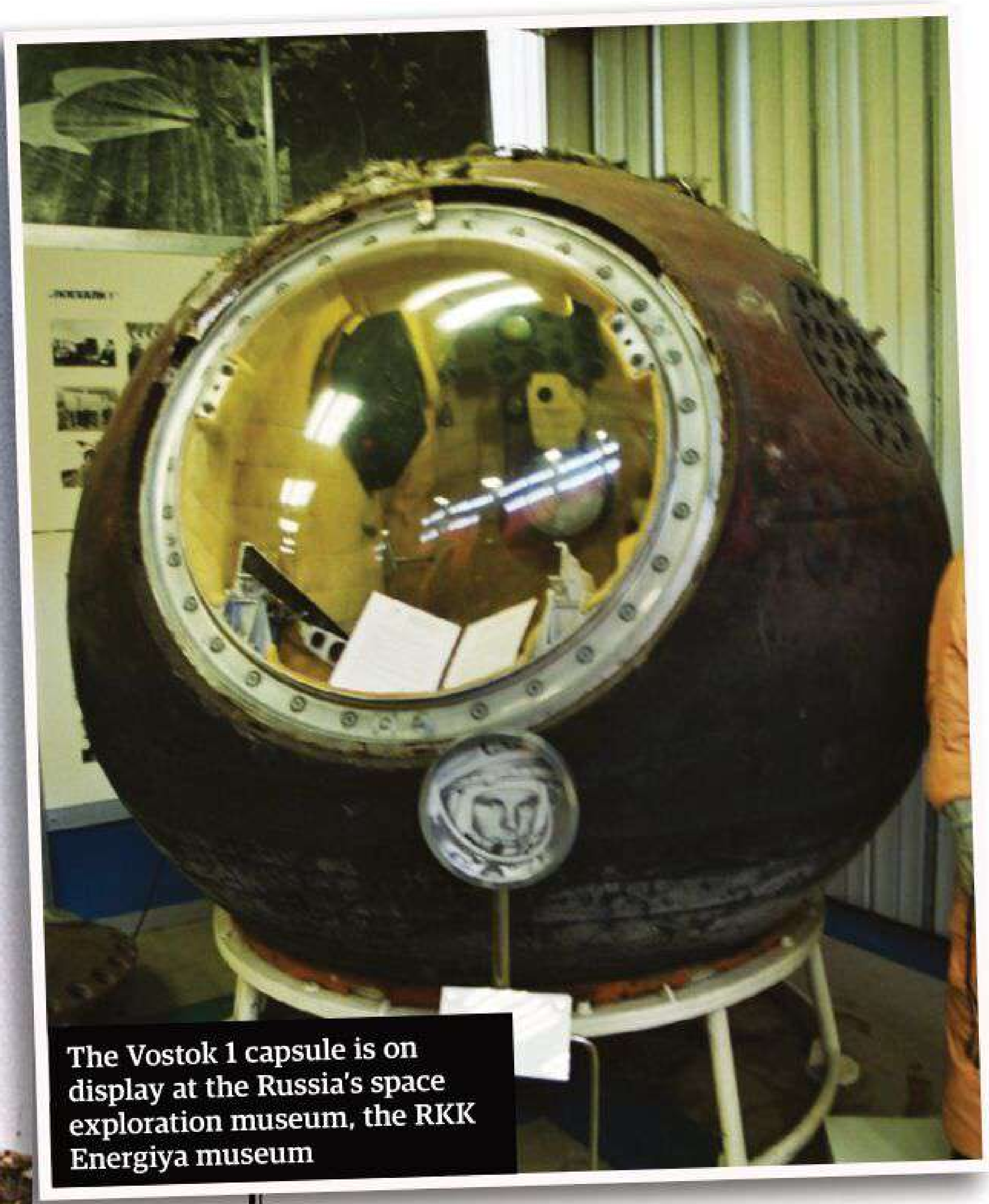
The Soviets were intent on making history and wanted the world-record for the highest altitude flight and successful landing. This required the craft to touchdown with the cosmonaut still inside, but Vostok 1 was not designed for that - the capsule was to come crashing down and Gagarin had to eject at an altitude of 7 kilometres and parachute the rest of the way. He landed near the village of Smelovka where he met two Russian peasants, Anna Takhtarova and her granddaughter Rita. They watched him, puzzled by his bright orange flight suit and bulbous helmet. "Can it be that you have come from outer space?" asked Anna, to which Gagarin replied "As a matter of fact I have."



The surprise success of Sputnik 1 triggered the Space Race

The meeting with the Takhtarovas made a great story, but it would have revealed the Soviets' lie that Gagarin landed in his craft, and so it didn't come to light until much later. In the meantime the Soviet government were keen to use Gagarin and his accomplishments as a propaganda tool. He was sent on a worldwide tour, visiting places as far afield as Japan, Brazil, Canada, even London and Manchester. Placed into situations meeting foreign dignitaries where he was expected to drink, he began to drink too much and suffered in the limelight, even reportedly having affairs. His superiors recognised the pressure he was under, and figured that once all the fame had died down, he'd get his life back to normal. Indeed, Gagarin did endeavour to take back control of his life, by

Gagarin's spacecraft, Vostok 1, is rolled out on its launcher ahead of lift off



The Vostok 1 capsule is on display at the Russia's space exploration museum, the RKK Energiya museum

> "He began to drink too much and suffered in the limelight"

cutting down on the excessive drinking and the affairs with women.

In 1963 he was promoted to the rank of colonel and made deputy director of the Soviet's cosmonaut training problem, but the authorities prevented Gagarin himself from flying into space again - they didn't want to risk their newfound national hero being killed in an accident. However, he was back-up to the doomed Soyuz 1 mission, which saw cosmonaut Vladimir Komarov, who was a friend of Gagarin's, killed when the capsule's parachutes failed, despite Gagarin warning the authorities that there were severe technical problems.

If he couldn't fly in space, then Gagarin was intent on at least being able to fly through the air and, in 1968, began piloting MiG-15 fighter jets once more. On 27 March 1968 Gagarin and his co-pilot, instructor Vladimir Serugin, took off into appallingly bad weather with lousy visibility. Not long into the flight, his jet crashed, killing both Gagarin and Serugin. The official report suggested that Gagarin had struck a bird or weather balloon, but more recent investigations have considered that an air vent was stuck open, causing the cabin to depressurise. However, air traffic control provided faulty information, while the investigation into the craft showed his altimeter was not working. Gagarin could have not realised how close he was to the ground when he made that dive.

Meanwhile fellow cosmonaut Alexei Leonov, who was in the vicinity at the time of the crash, has an alternative theory. He heard two bangs, one of which he attributes to the crash, the other to the sonic boom of a second jet. Indeed, air traffic control reportedly saw a second, unidentified aircraft on the radar shortly before the crash; Leonov surmises that the second jet was supersonic jet flying lower than it should have been in the poor weather, and that is sonic boom shattered Gagarin's cockpit, resulting in him losing control.

And so the Soviet Union and indeed the world lost one of its heroes at the tragically young age of just 34 years of age. He may have only made that one brief trip into space, but he made his mark, signalling humankind's arrival amongst the stars.

Defining moment

The training exercise

The cosmonaut and his flight instructor Vladimir Seryogin were killed when their jet fighter aircraft crashed near the town of Kirzach, Russia. It's suspected that Gagarin's aircraft lost control when an unauthorised SU-15 fighter jet flew too close and let out a sonic boom, shattering Gagarin's cockpit and depressurising the cabin.

27 March 1968

The Space Race

During the 20th Century, the Soviet Union and the United States were embroiled in a heated competition for space supremacy - both countries wanted to be the first to launch an artificial satellite into Earth orbit. The Space Race began in the summer of 1955, when the Soviets answered the US' announcement where they intended to launch a spacecraft 'in the near future'. The rivalry between the two superpowers occurred not too long after the Second World War, where political conflict and military tension drove a wedge between the countries.

Refusing to be outdone, the Soviet Union launched spacecraft Sputnik 1 into Earth orbit in October 1957, an 58 centimetre (23 inch) unmanned craft that would later pave the way for Sputnik 2, which carried on board the first living animal into space - a stray dog named Laika. The success of the Soviets raised concern with the Americans, prompting the country to launch their Project Vanguard satellite much sooner than they originally planned. The televised moment had millions of United States citizens tune into their TV screens - to what quickly became apparent as a failure. Soon after launch, the satellite exploded several times, causing the Americans to become ridiculed in the newspapers. In the wake of 'Flopnik', the States launched their Juno I rocket as soon as they could and, on 31 January 1958, America successfully released its satellite into space.

The Space Race was won by the Soviets when they launched the first human - Gagarin - into Earth orbit. However, without it, pioneering efforts to send unmanned spacecraft to bodies such as the Moon, Venus and Mars along with human spaceflight may never have happened.

Neil Armstrong

First Man on the Moon

Neil Armstrong's "one small step" was watched by hundreds of millions of people as he entered the history books and became the first person to walk on the Moon

When Neil Armstrong was stepping out of the Lunar Module Eagle and onto the surface of the Moon on 20 July 1969, he had with him, all the way from Earth, a World Scout Badge. As a youngster, he'd been a Boy Scout and three decades later still felt a strong association with them. Their motto, 'Be Prepared', and the self-reliance, ingenuity and leadership that the Boy Scouts instilled in their members were to serve Armstrong in good stead throughout his life. Without his skill and calm head at the controls of the Lunar Module, he and Buzz Aldrin may have never survived their landing on the Moon.

> Buzz Aldrin was going to be the first man on the Moon, but this was switched to Armstrong because he was sat closest to the hatch

All Armstrong had ever wanted to do was fly. Born on 5 August 1930 in Ohio in the United States, his father took him to an air race at the age of two, before he experienced his first flight four years later. In 1949 he joined the US Navy as a pilot, seeing action in the Korean War, before leaving the military to go to college to obtain a degree in aeronautical engineering. In 1955, he joined the National Advisory Committee for Aeronautics (NACA) – the organisation that in 1958 was transformed into NASA – as a test pilot, flying some of the fastest experimental aircraft in the world at that time. It was here that he would display the cool, collected calmness under pressure that would see Armstrong be selected first for astronaut training, and then to command the first crewed mission to the Moon.

His first in-flight drama came in 1956, when flying a giant Boeing B29 super-fortress, with a Douglas D-558-2 Skyrocket supersonic jet strapped to its underbelly. The plan was to reach 210 miles per hour before releasing the Skyrocket which would then fly away from the B29. However, one of the B29's propellor engines stopped working, the propellor spinning wildly and threatening to fly apart. Unable to reach the necessary air speed to air-drop the Skyrocket, Armstrong and his co-pilot Stan Butchart took their craft into a dive, accelerating to 210 miles per hour to allow the Skyrocket to detach and jet away.

As the Skyrocket was released, the failed engine disintegrated, the debris taking out two other engines, forcing Armstrong and Butchart to limp back to base and land safely under the power of just one engine.

Working out of Edwards Air Force Base, Armstrong had more fun and drama flying the X-15, one of the most famous experimental aircraft in history. During one flight that saw him reach

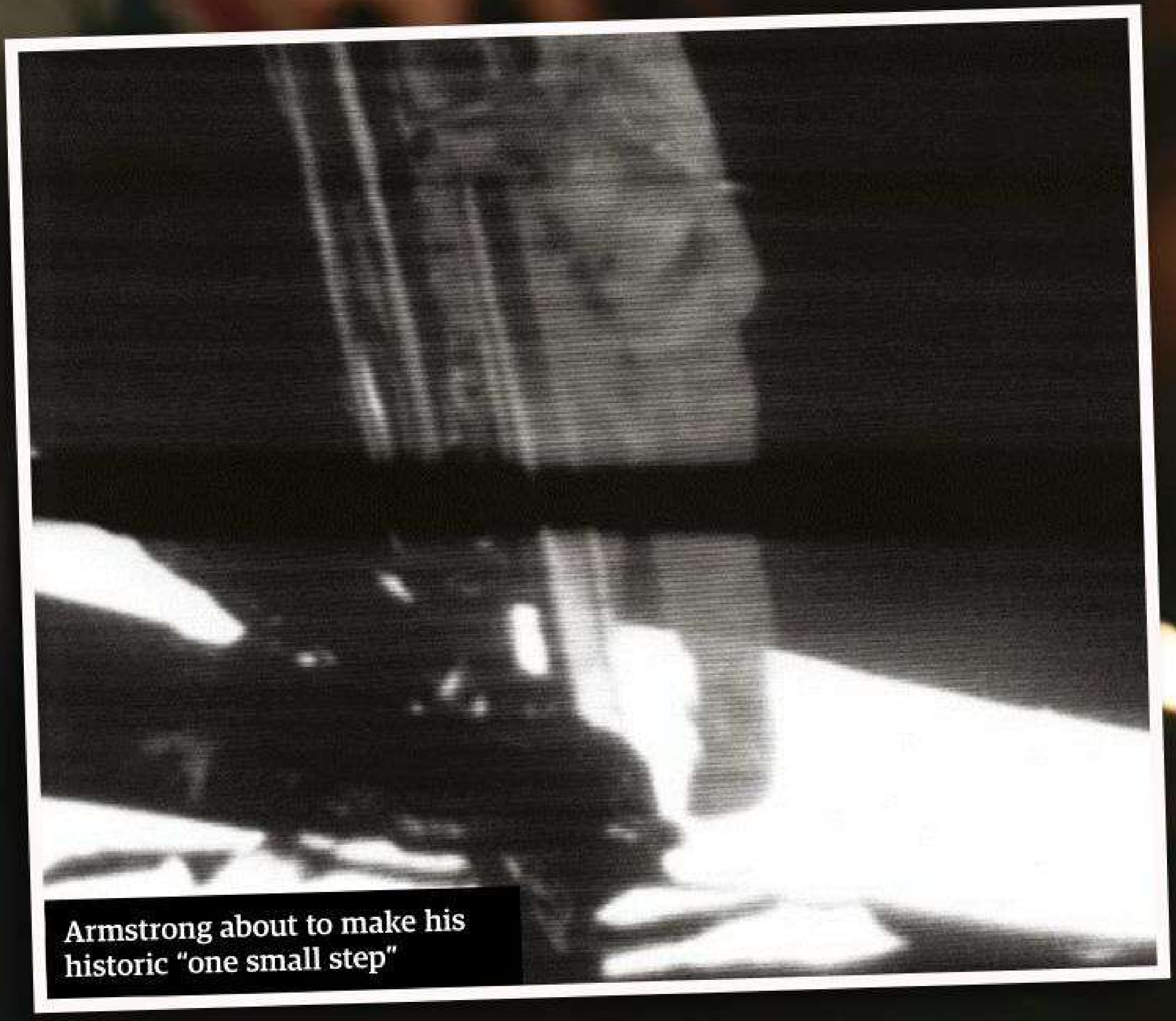
NEIL ARMSTRONG

1930-2012

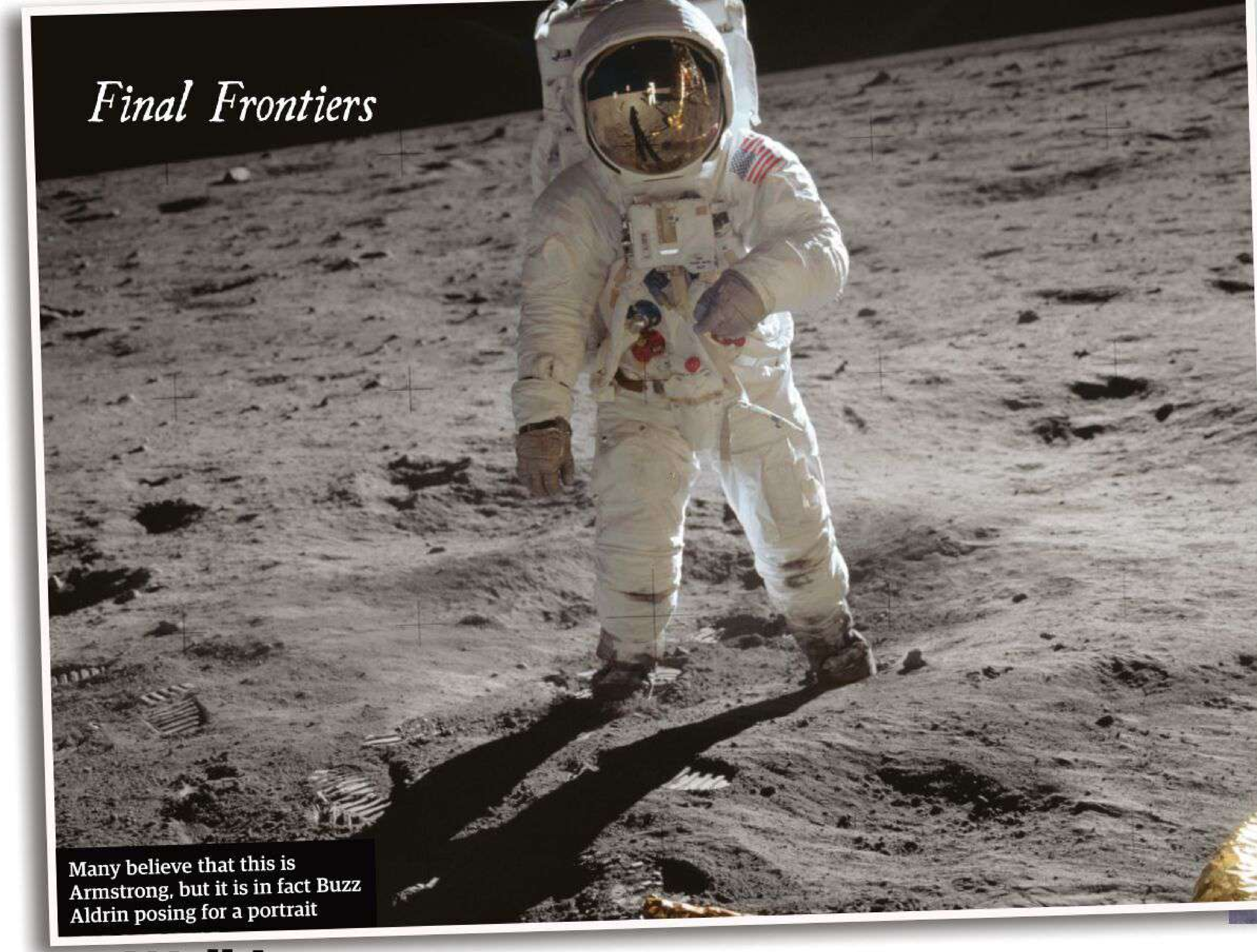
Brief Bio

As commander of the Apollo 11 mission, Neil Armstrong was the first person to ever step foot on the Moon, in July 1969. An experienced test pilot with a degree in aeronautical engineering who flew in the Korean War, Armstrong also commanded the Gemini 8 mission that made the first rendezvous and docking with another spacecraft.

Neil Armstrong, back inside the Eagle after his Moon walk, grinning from ear to ear



Armstrong about to make his historic "one small step"



Many believe that this is Armstrong, but it is in fact Buzz Aldrin posing for a portrait

Walking on the Moon

The Moon's gravity is only one-sixth the strength of Earth's gravity, which means when Neil Armstrong was walking on the Moon, he was practically bouncing around. To survive on the airless surface, where the temperatures can reach 100 degrees C in the daylight and –173 degrees C at night, the Apollo astronauts had to wear the A7L spacesuit, which was basically a one-piece airtight suit which the astronauts had to climb into. The suit was coated with an outer layer designed to protect against tiny meteorites and radiation from the Sun, while on their backs the astronauts carried the bulky Portable Life Support System (PLSS), which regulated the air pressure inside the suit, provided the oxygen for the astronauts to breathe and monitored the astronaut's health, amongst other things. However, so tiny was the lunar module, and so large the PLSS, that Armstrong and Buzz Aldrin had trouble squeezing through the hatch to commence their famous Moon walks.

Armstrong and Aldrin spent about two-and-a-half hours walking on the surface, with Armstrong wandering up to 60 metres from the Eagle. They collected rock samples, spoke to President Nixon, took photos and left behind a memorial to cosmonauts and astronauts who had been killed in accidents.

207,000 feet, he found himself bouncing off the atmosphere when trying to descend, causing him to overshoot his landing site at mach 3. There were many other incidents too – the planes Armstrong was flying were powerful and occasionally temperamental, and only the most skilled pilots could rein them in, like a horseback rider on a wild, bucking stallion.

After enrolling as an astronaut in 1962, the drama kept coming, and Armstrong kept meeting it with the same cool head. In 1966, on his first space mission, he and David Scott launched into space on board Gemini 8. The mission was to make the first ever docking between two ships in space. The docking, with an uncrewed Agena vehicle was a success, but after detaching again Armstrong and Scott found their Gemini 8 capsule spinning out of control. With the limited tracking station coverage meaning that mission control kept losing contact with Gemini 8, Armstrong had no choice but to take matters into his own hands, switching on the re-entry control system and using its thruster rockets to counter the spin. They had to abort the rest of the mission and return home, but the episode taught NASA a great deal about rendezvousing in space and that docked spacecraft act like one vehicle. Such experiences would prove vital for the Apollo Moon missions, where the command module would be required to dock with the Lunar Module.

> Neil Armstrong and Buzz Aldrin were almost stranded on the Moon, after they damaged the Eagle's engine ignition switch

The Lunar Module, which would take Armstrong and Buzz Aldrin down to the surface of the Moon while Michael Collins remained in the Command Module orbiting overhead, was a very different vehicle to fly than any others that Armstrong had previously piloted: a box on legs with an engine strapped underneath. While near the Moon's surface the Lunar Module would be flying in gravity just one-sixth of Earth's, and with no atmosphere.

To best mimic the flying conditions, Armstrong and the other astronauts trained in the Lunar Landing Training Vehicles (LLTV), which the space-men referred to as 'flying bedsteads' referring to their basic appearance. The LLTVs had engines that pushed the vehicle upwards against the pull of gravity, so it felt to the pilot that they were in one-sixth Earth's gravity while flying the vehicle.

While flying an LLTV on 6 May 1968, Armstrong experienced possibly his most dangerous moment as a pilot, when the controls on the vehicle suddenly began to lock up while 30 metres above ground. As the LLTV banked sharply, Armstrong

Apollo 11 Timeline

16 July 1969

The mighty Saturn V rocket blasted off on 16th July 1969, its rocket fire roaring as the Saturn V climbed into the clouds. The rocket was divided into three stages and, after one-and-a-half orbits of Earth, the third stage gave Apollo 11 its final nudge towards the Moon.

16 July 1969

The way the Command and Lunar Modules were stacked in the Saturn V's nosecone meant that after leaving Earth, the Command and Service Modules had to pull away, spin around and then dock with the Lunar Module before continuing their mission to the Moon.

19 July 1969

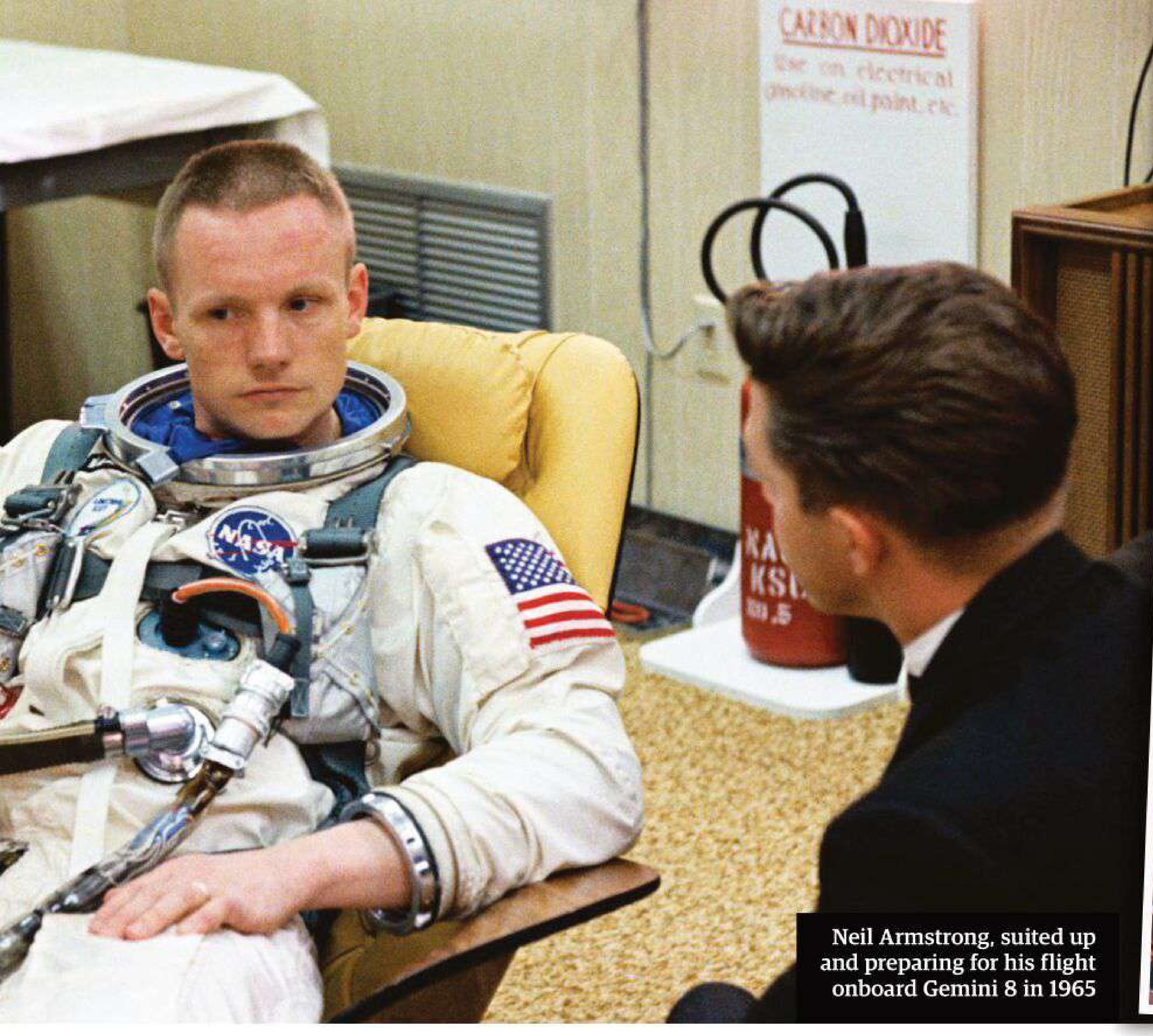
Before landing on the Moon, Apollo 11 had to fly around the lunar far side, where the crew would be out of view and out of contact with Earth. On its way around the Moon, the Service Module engine fired to place Apollo 11 in orbit.

20 July 1969

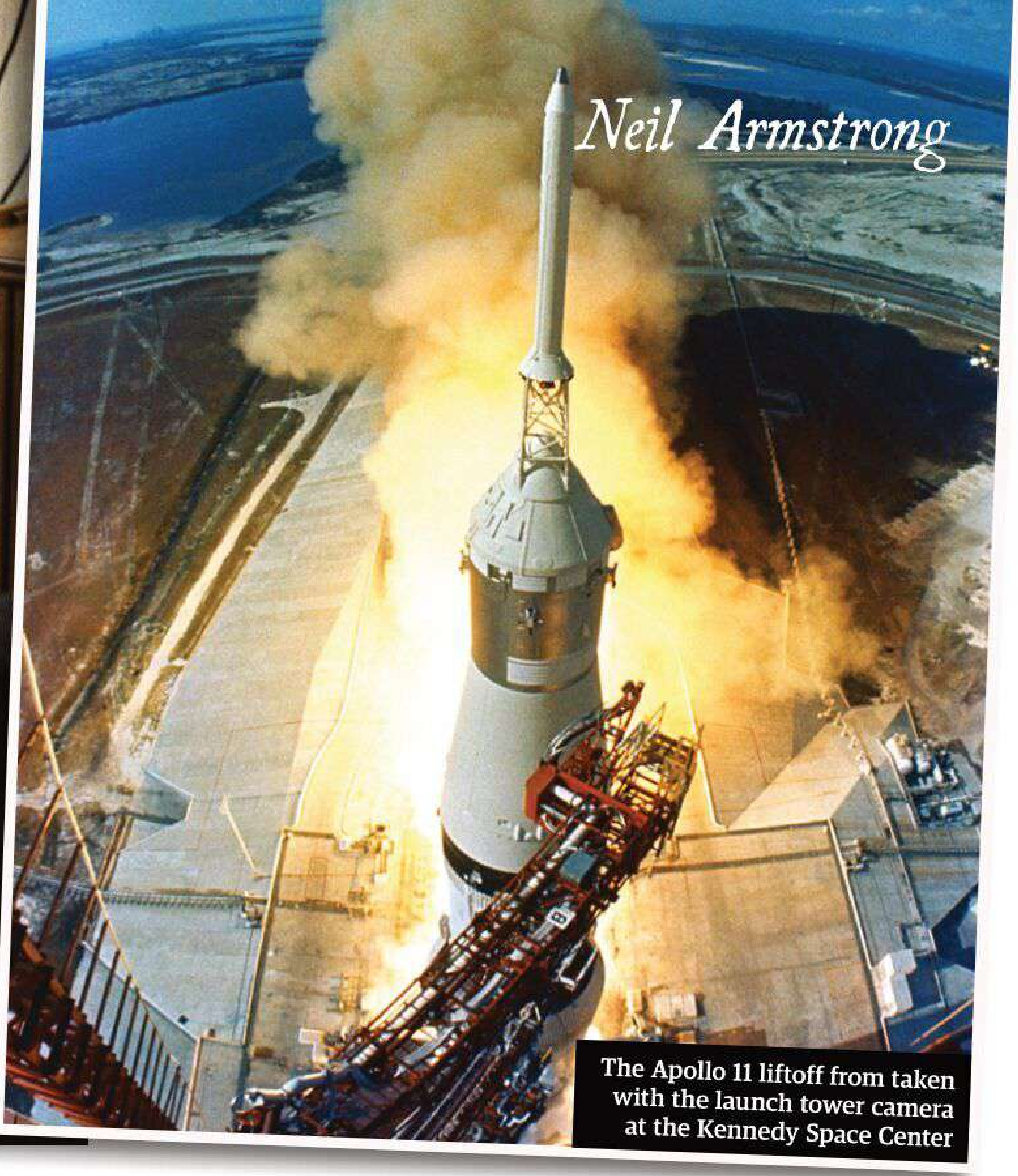
As the time came to land, Armstrong and Aldrin clambered into the Lunar Module Eagle, leaving Michael Collins to orbit the Moon alone in Columbia. At 20:17 GMT, Eagle separated from Columbia and began its descent.

20 July 1969

After manually flying the Eagle over boulder-strewn fields, Neil Armstrong guided the Lunar Module to a safe landing with just 45 seconds-worth of fuel left, touching down on the surface at 20:17 GMT.



Neil Armstrong, suited up and preparing for his flight onboard Gemini 8 in 1965



The Apollo 11 liftoff from taken with the launch tower camera at the Kennedy Space Center

ejected and the vehicle crashed into the ground and exploded. Had he ejected just one second later, Armstrong would have been killed – his quick thinking and calmness under pressure saved the day yet again.

These qualities, coupled with his low-key personality, saw him made mission commander for Apollo 11 and it was decided that he, rather than Buzz Aldrin, should be the first person to step foot on the Moon. Armstrong was optimistic about the mission and coming back from the Moon alive, but he put the chances of successfully landing on the lunar surface at about 50:50.

> Neil Armstrong served on the accident investigation panels for both Apollo 13 and the Challenger space shuttle disaster

On 20 July 1969, Armstrong and Aldrin found out firsthand how risky landing on the Moon could be. As the Eagle descended, Armstrong noticed that the craters were moving past the window too fast – they were going to overshoot their safe landing site and come down in relatively unknown territory in the Sea of Tranquility. Ahead of the Eagle, large boulders loomed, big enough to damage or even destroy the Eagle should it come down on any of them. Sensing trouble, Armstrong took manual control of the Eagle. As fuel began to run low, the tension almost tangible and Armstrong's heart beating 160 times a minute, with intense focus and concentration he guided the Lunar Module past the boulders and to a safe landing, with just 45 seconds of fuel left. Armstrong wasn't fazed, and the engineers and flight controllers back in Texas let out a long sigh of relief.

"Houston, Tranquility Base here," said Armstrong over the radio. "The Eagle has landed."

Eager to step out onto the grey, dusty surface the two astronauts performed their extra-vehicular activity – in other words, a Moon-walk – ahead of schedule. As planned, Armstrong left the Eagle's hatch first. Clambering down the ladder, stopping to check how deep the Eagle's legs had pushed into the lunar dust, he gently stepped down onto the surface and said the words that will be remembered for all time.

"That's one small step for [a] man, one giant leap for mankind." To this day, people argue about whether he said "a man". For his part, Armstrong believed that he did say it, but that static obscured it during the television transmission.

> There is no air and barely any erosion on the Moon, so his footprints will remain for hundreds of millions of years

Aside from the fuzzy television footage, there are only five or six photographs of Neil Armstrong on the Moon because for most of their Moon-walks, Armstrong was the one holding the Hasselblad camera taking pictures of Buzz Aldrin. Ironically, the most famous photograph of Armstrong is actually a picture of Buzz Aldrin, with Armstrong holding the camera reflected in Aldrin's helmet visor.

The history-making flight ended with a parachuted return to Earth and 18 days in quarantine for Armstrong, Aldrin and Command Module pilot Michael Collins. After they were let out, they headed on a 45-day world tour to bask in people's adulation. For Armstrong, however, it signalled the end of his flying days – Gemini 8 and Apollo 11 were his only missions into space. For a while he became the Deputy Associate Administrator for Aeronautics at NASA, before going to the University of Cincinnati to teach aeronautical engineering for eight years. After a spell in academia, Armstrong then went into business while still occasionally acting as an spokesperson for NASA and aerospace companies.

Armstrong lived until 25 August 2012, when he passed away following complications from heart surgery at the age of 82. Neil Armstrong may be gone, but his memory and legacy will live on for as long as human civilisation.

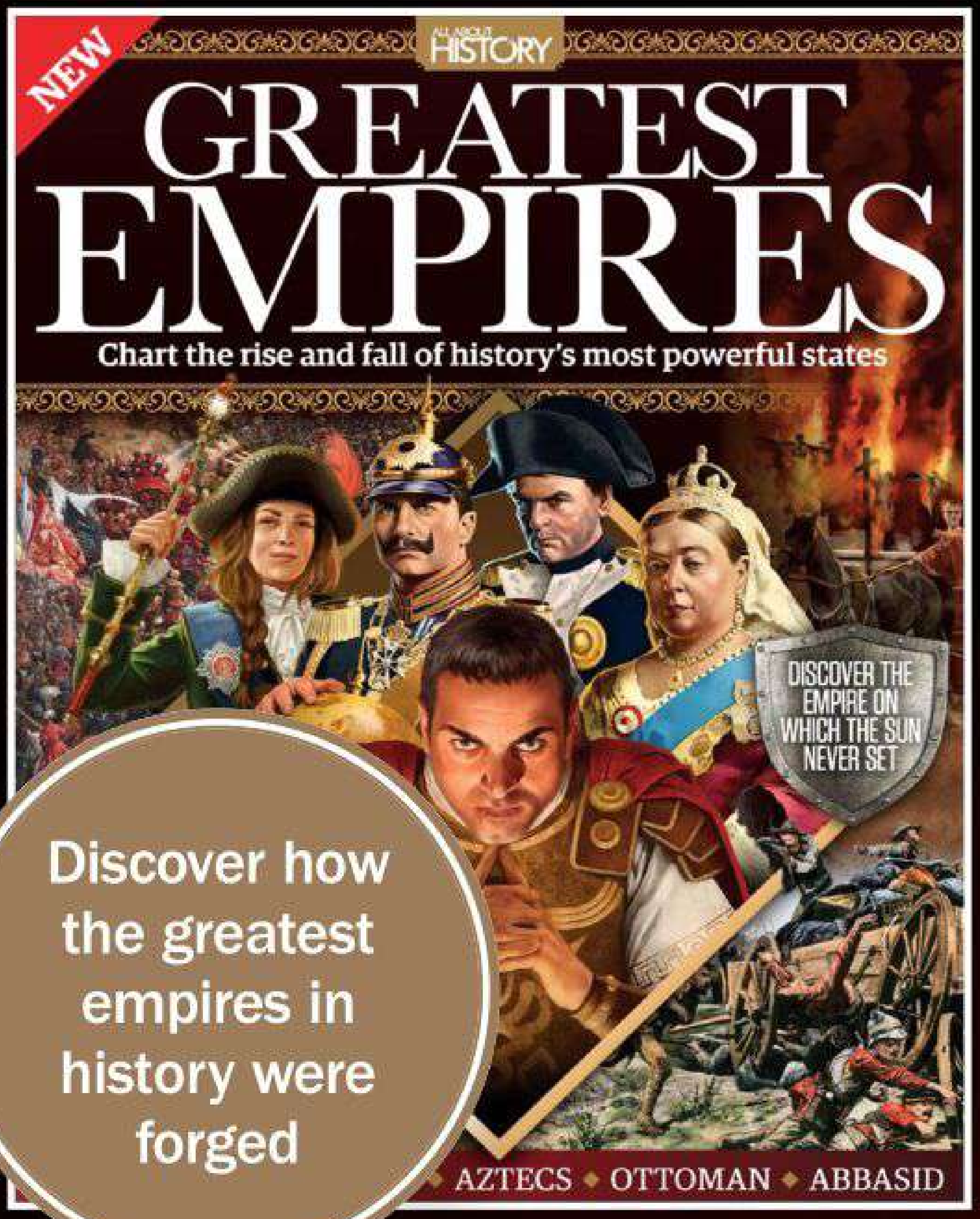
20 July 1969
At 02:51 GMT, Neil Armstrong opened the Eagle's hatch and climbed out. Moving down the ladder, switching on the television camera and pausing to study how deep into the dust the Eagle's legs had sunk, he placed his left boot into the lunar dirt at 02:56 GMT.

21 July 1969
At 17:54, after less than a day on the surface, it was time to leave. The Lunar Module's Ascent Stage fired its engine, with the blast knocking the flag of the US stars and stripes over as Armstrong and Aldrin soared back home to Planet Earth.

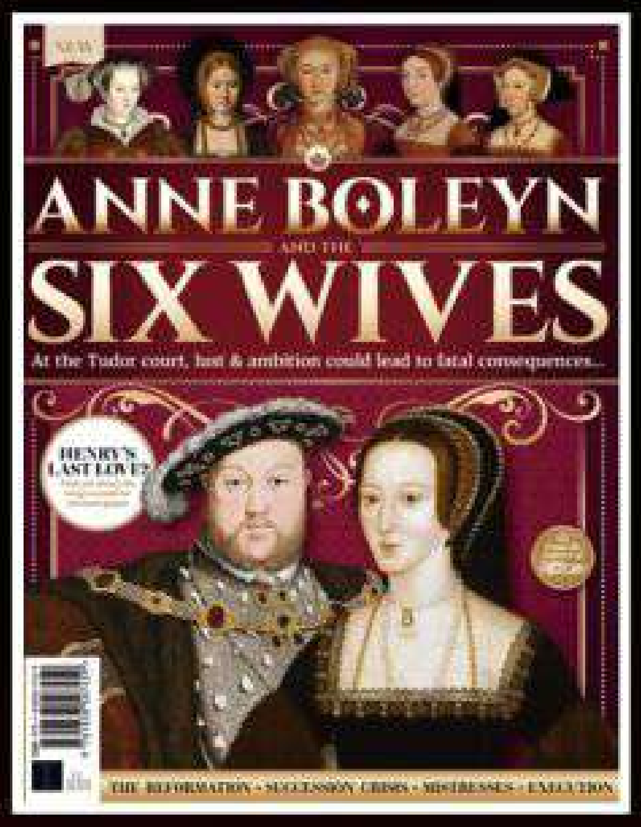
21 July 1969
The Lunar Module ascent stage then had to dock with the orbiting Columbia, after which the astronauts and their lunar samples transferred back into the Command Module and the ascent stage was jettisoned. They were coming home.

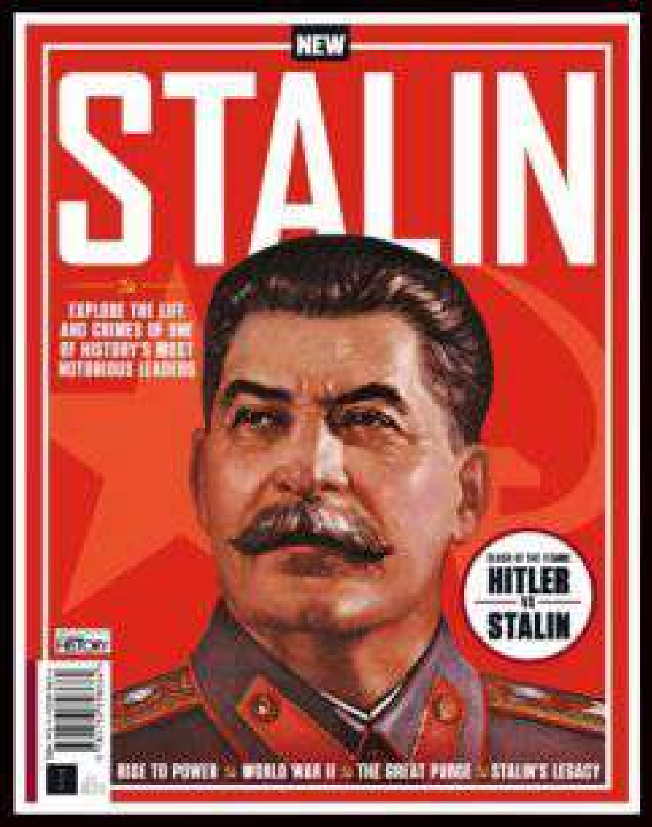
24 July 1969
After their flight back to Earth, Columbia began its descent into our atmosphere, parachuting down into the Pacific Ocean, where the crew were retrieved by a Navy helicopter and delivered to the USS Hornet, where President Nixon was waiting to greet the brave astronauts.

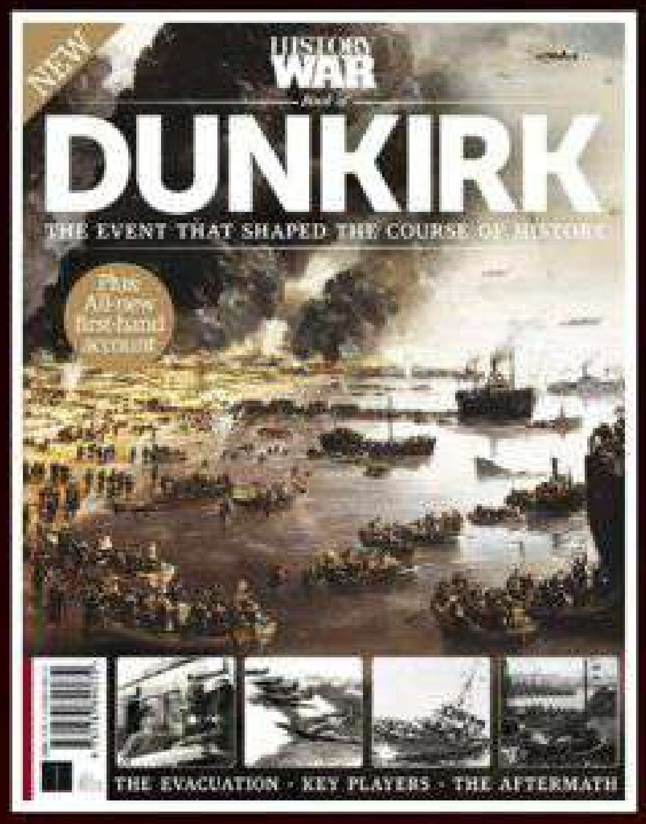
10 August 1969
After three weeks in quarantine, to make sure they hadn't brought any harmful bugs back from the Moon (at the time it wasn't clear that no life could exist on the Moon) the crew of Apollo 11 were allowed back out into the world, where they were greeted as heroes.

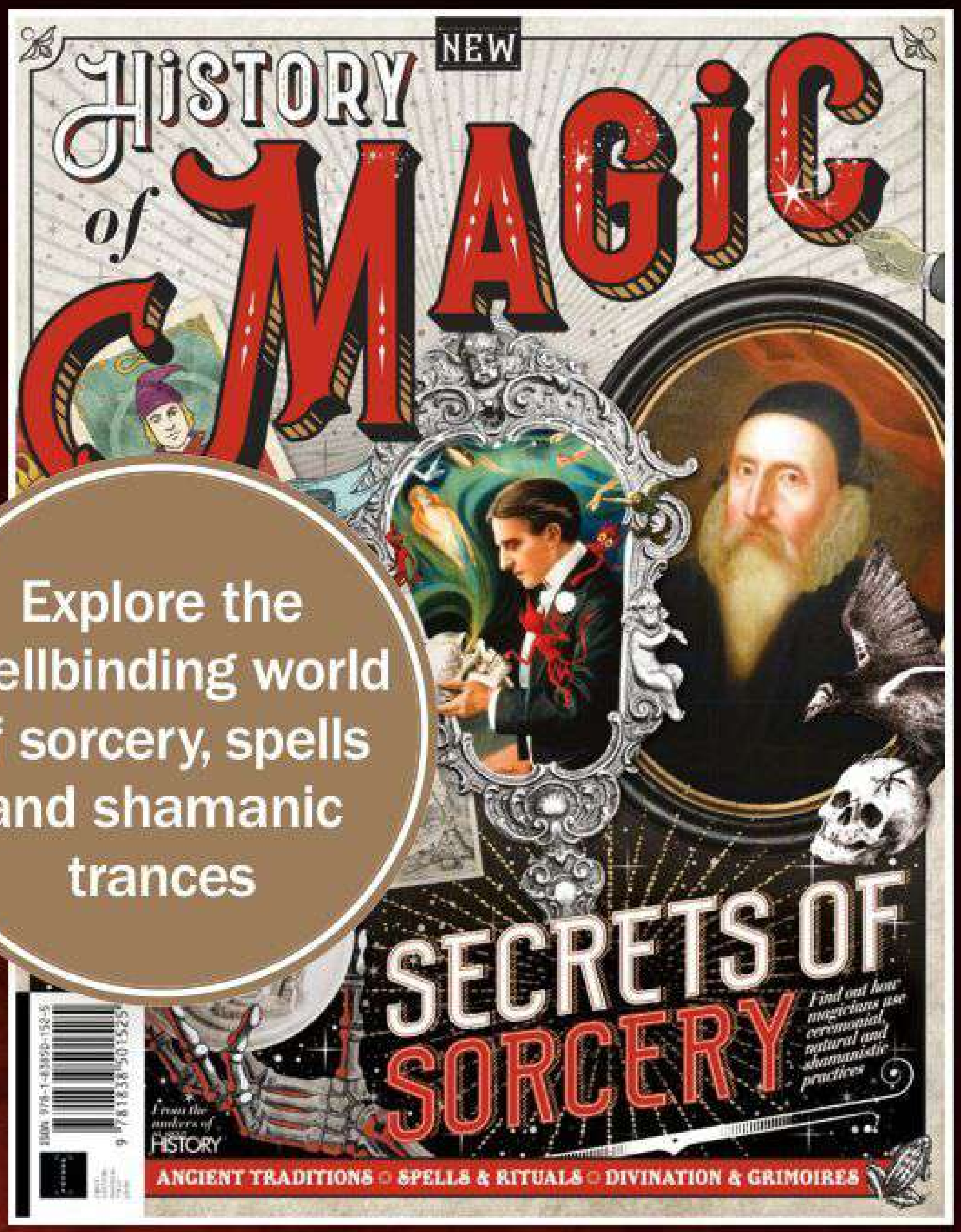


Discover how the greatest empires in history were forged

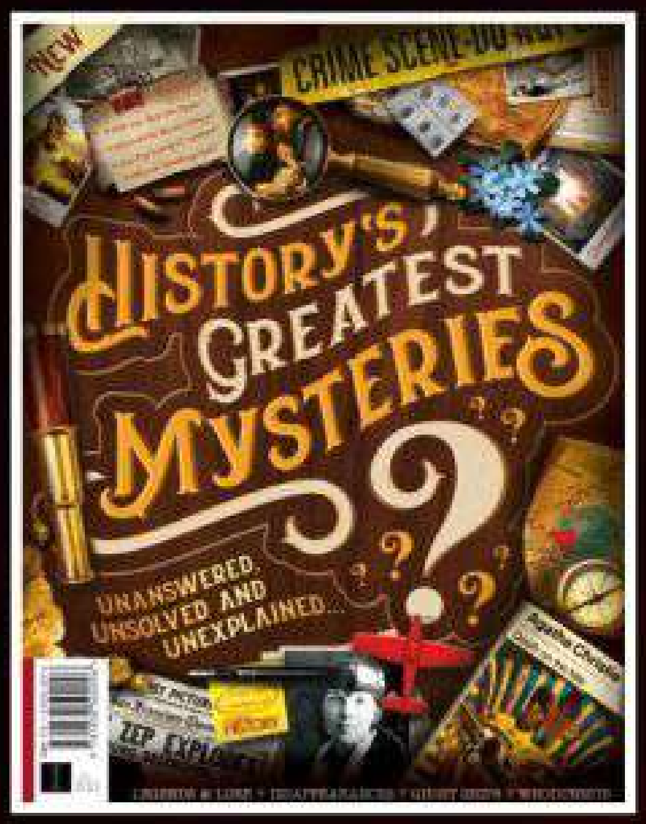


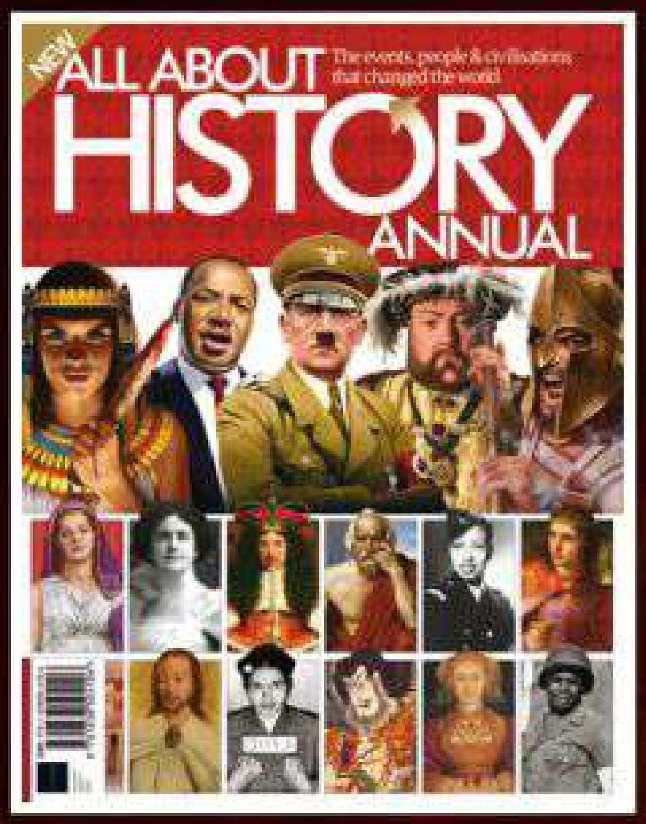






Explore the spellbinding world of sorcery, spells and shamanic trances





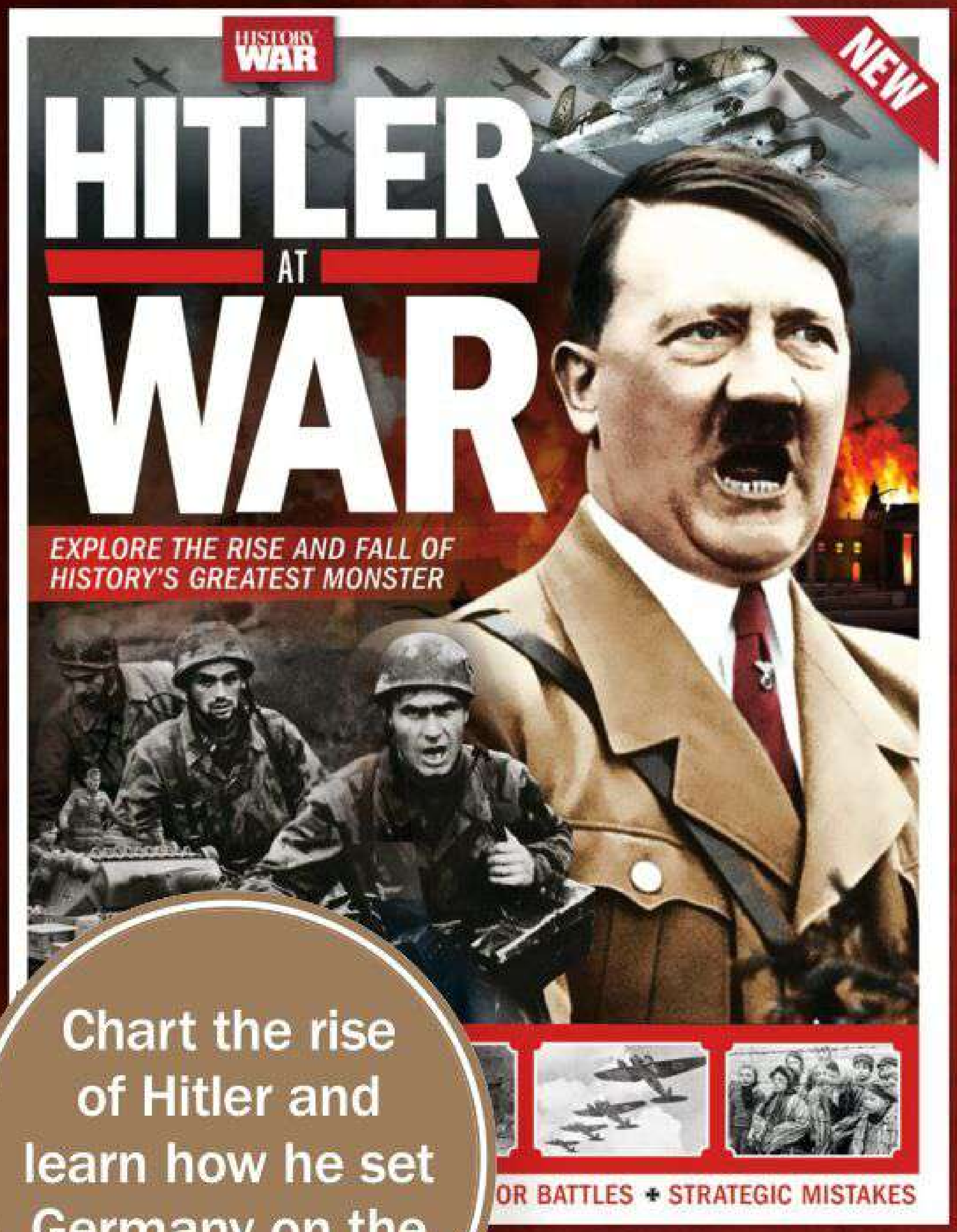
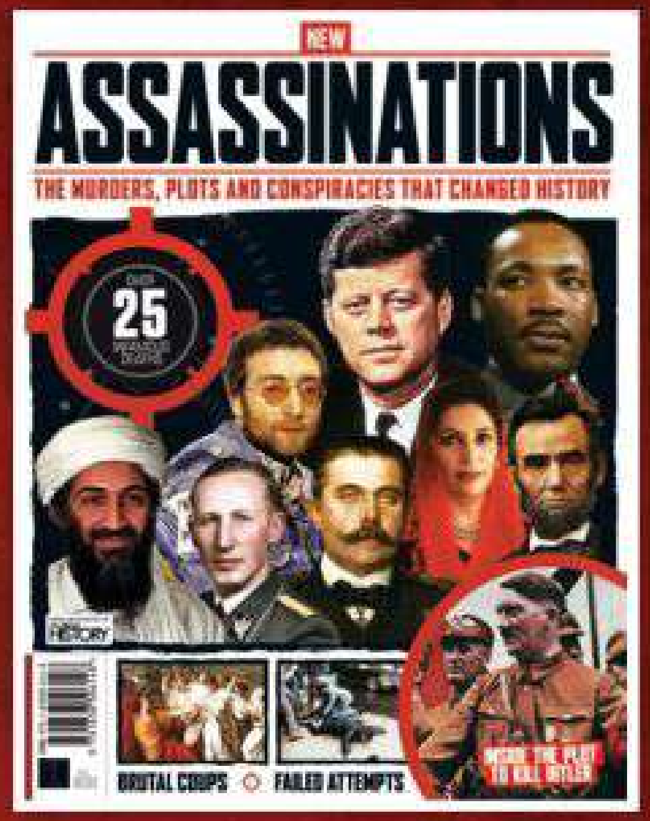
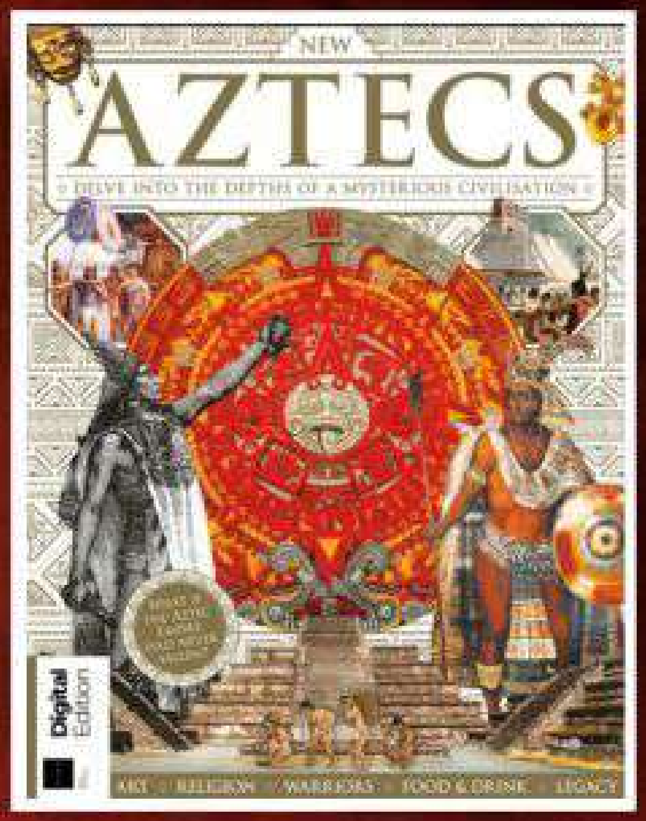
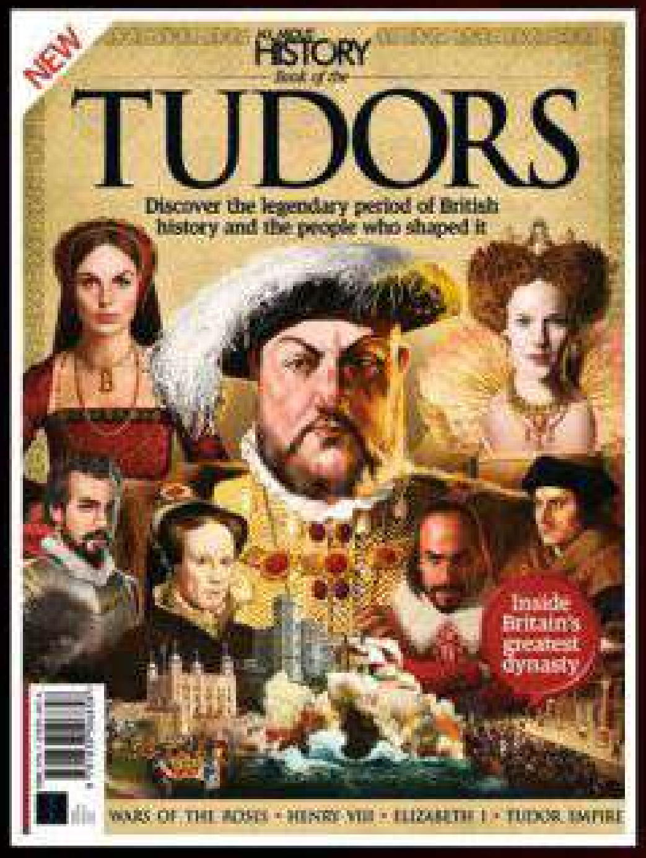
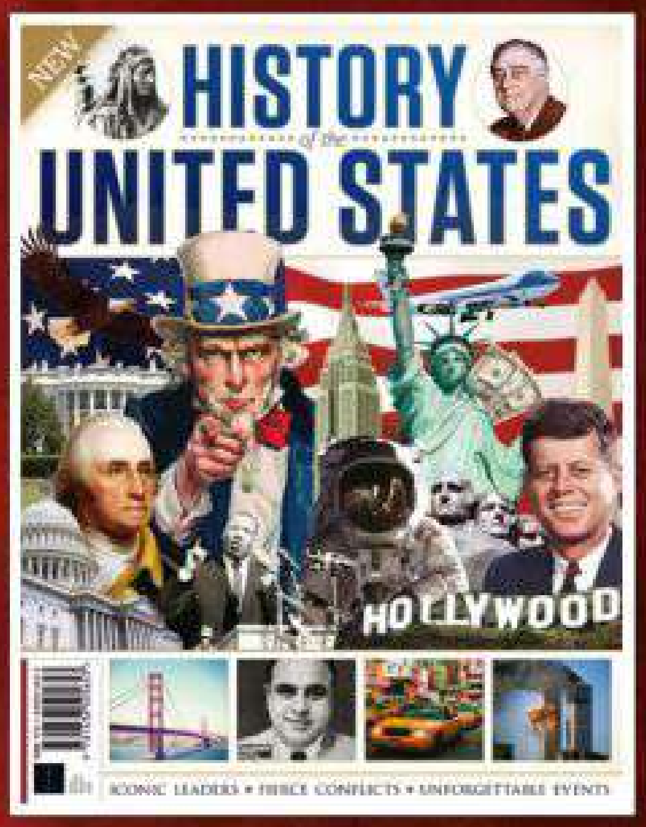


Chart the rise of Hitler and learn how he set Germany on the path to war









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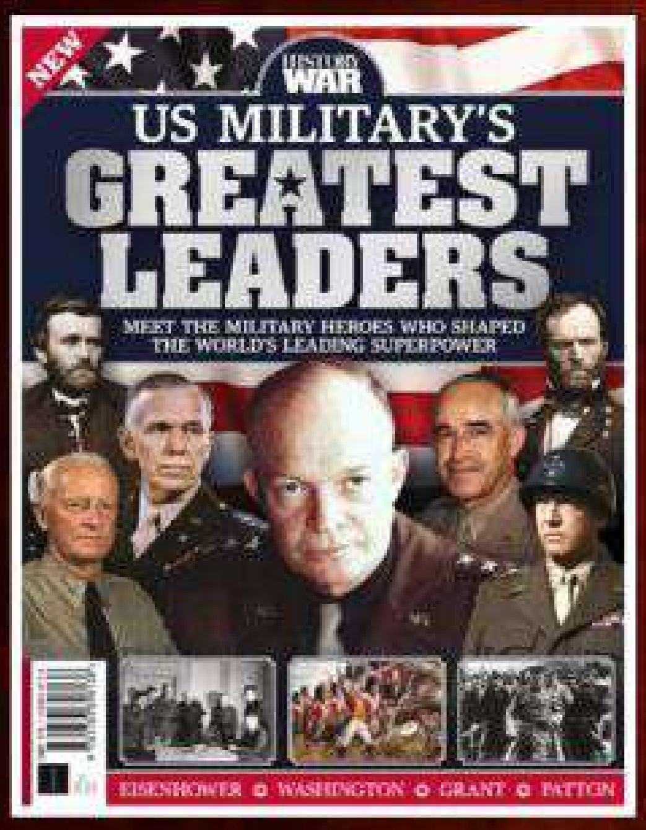
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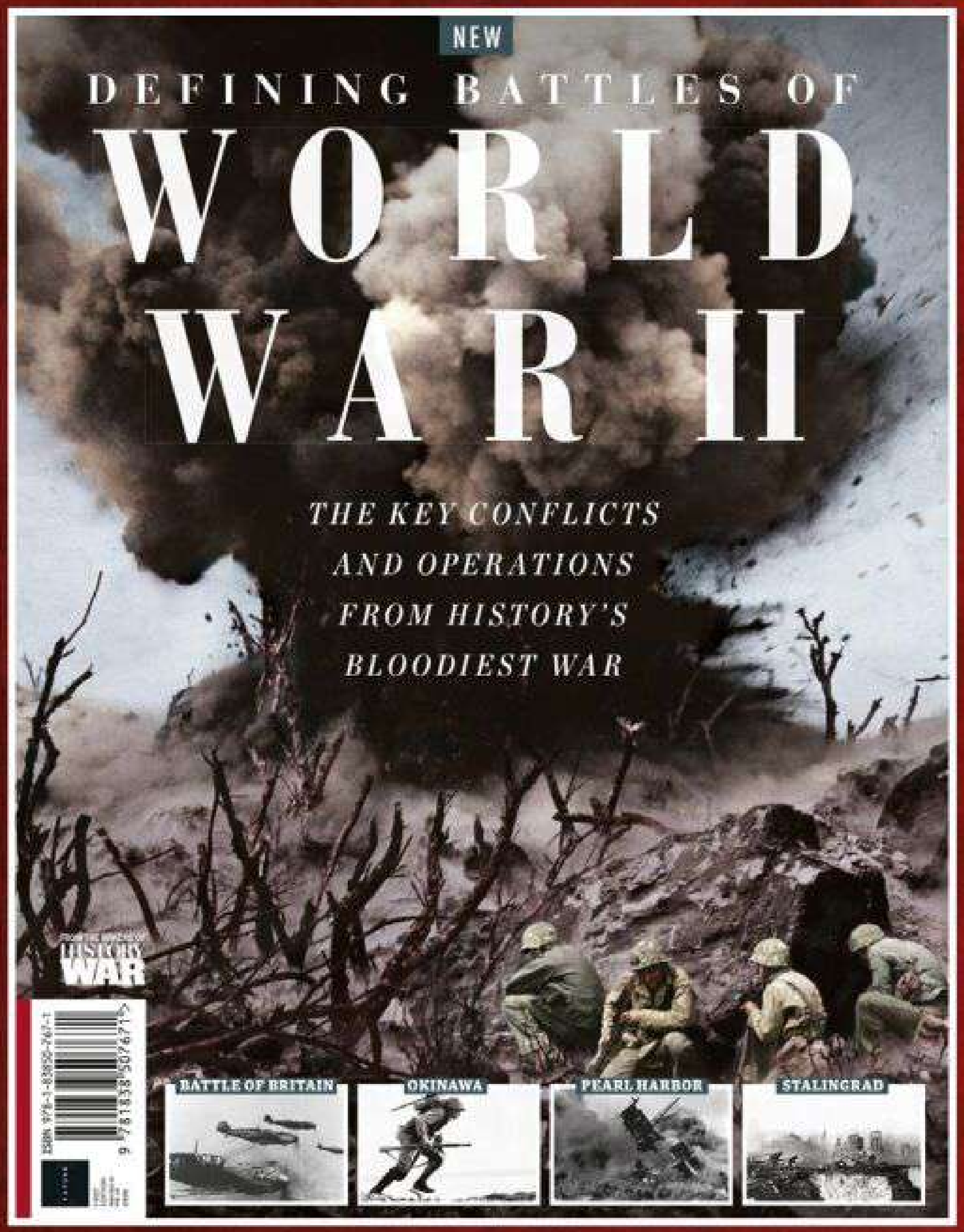
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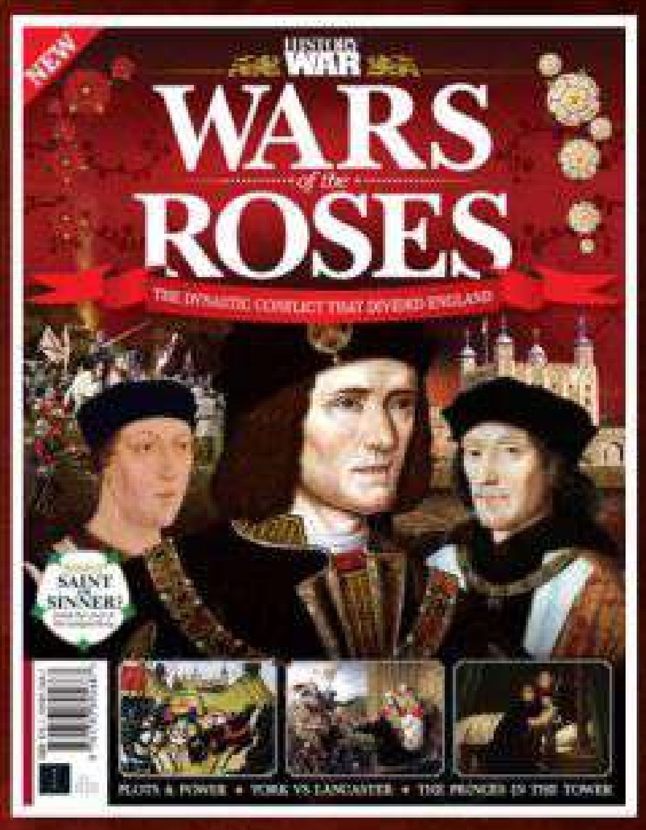
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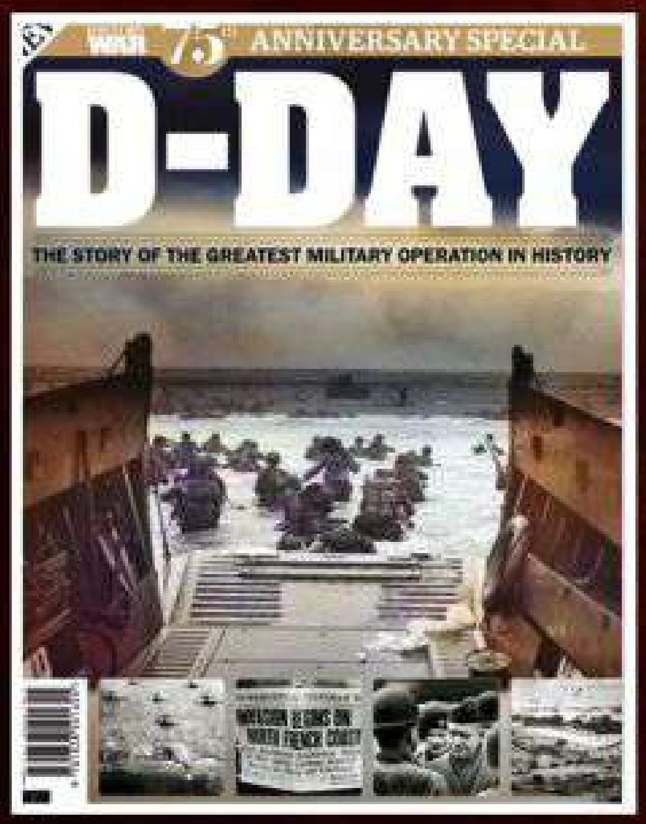

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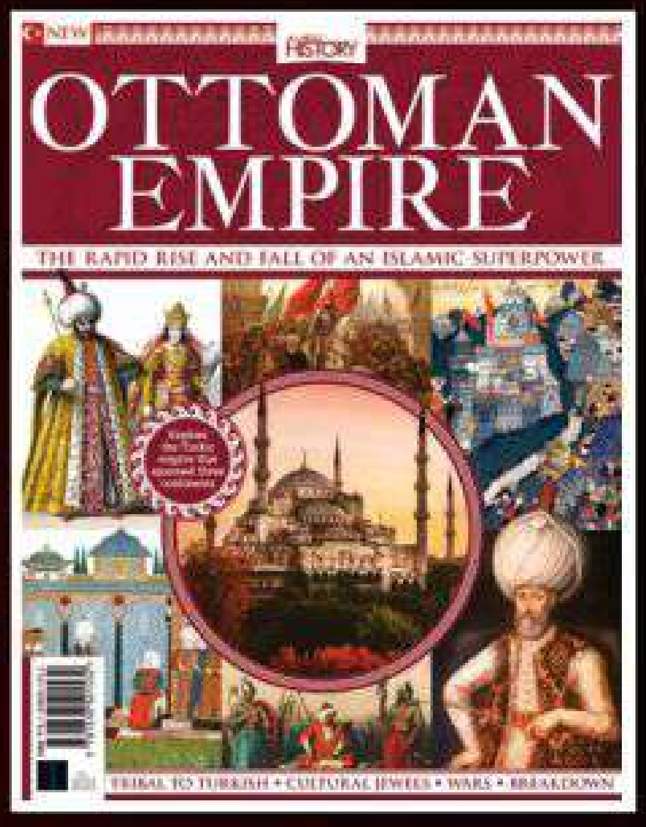
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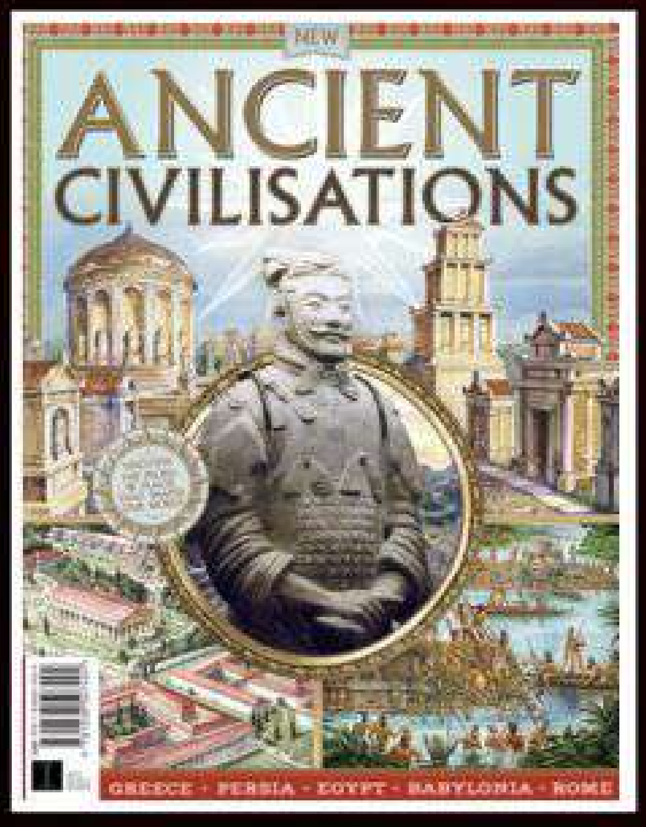
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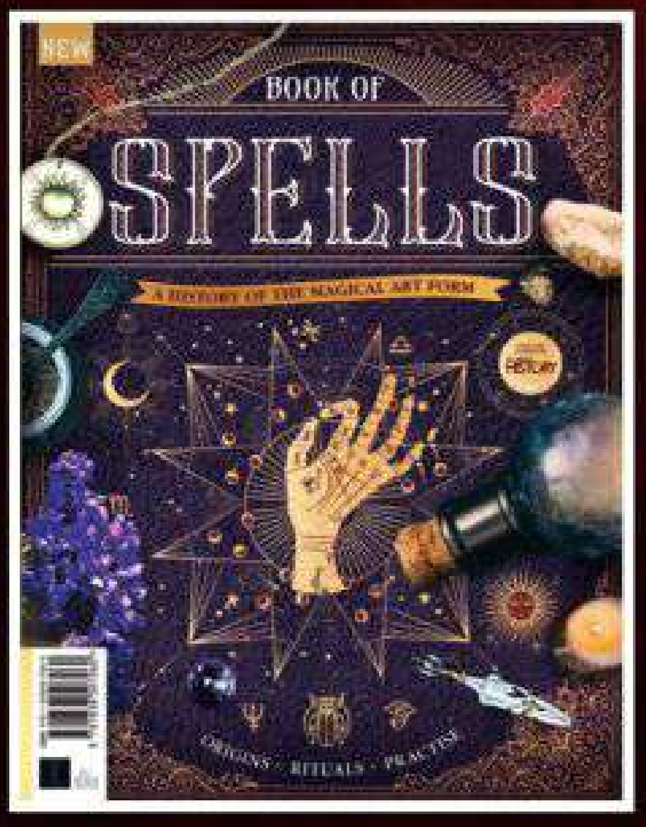
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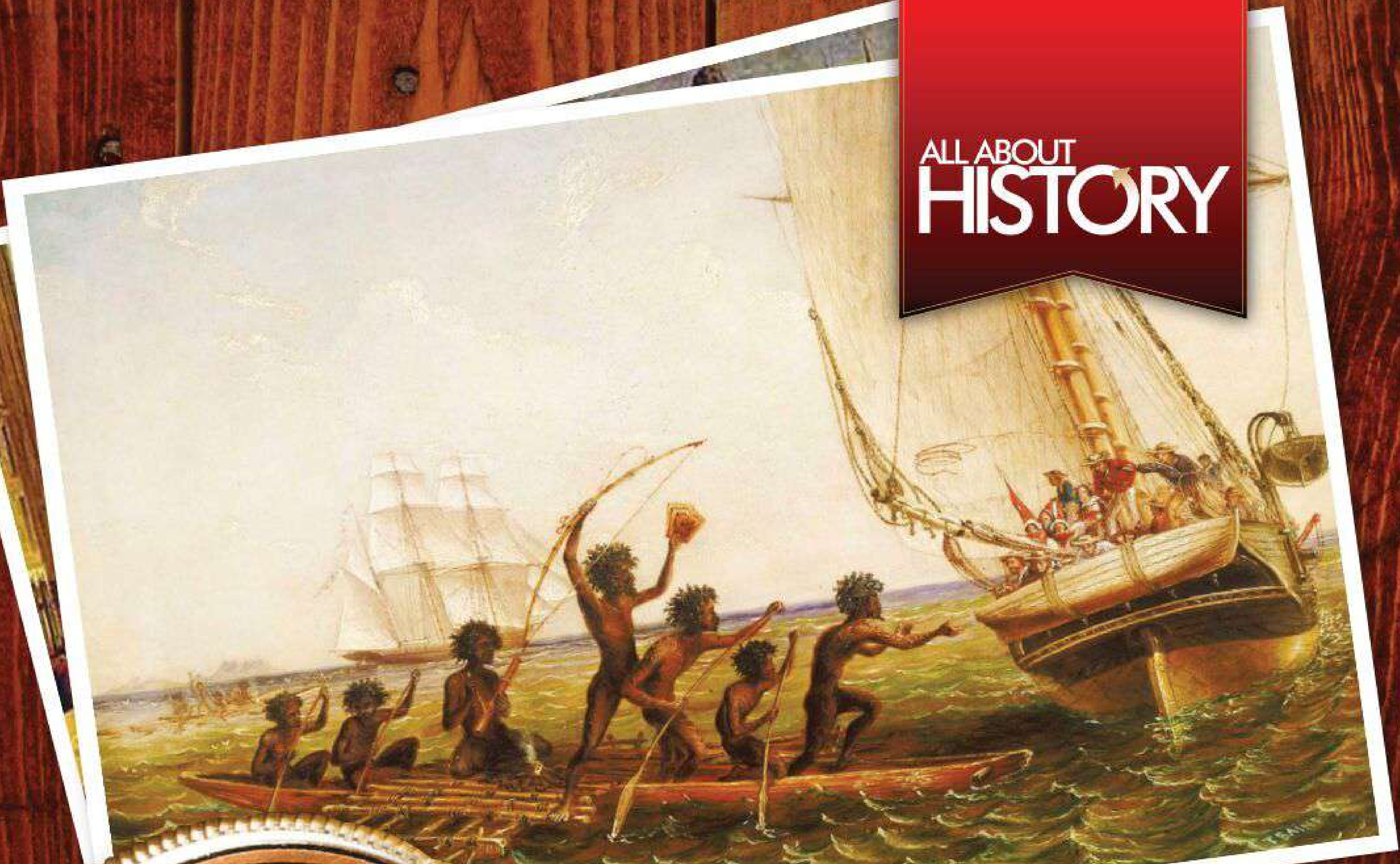

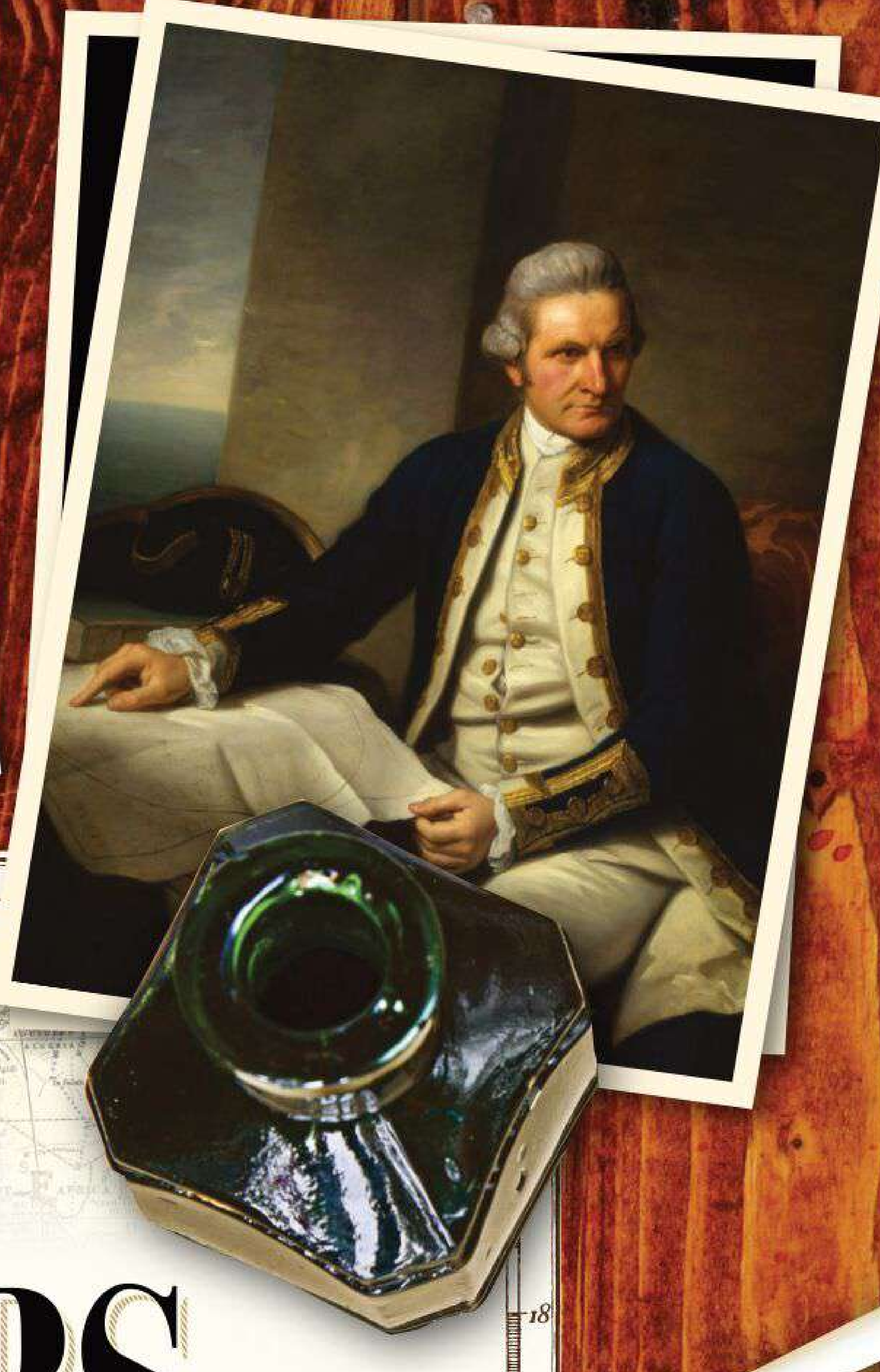

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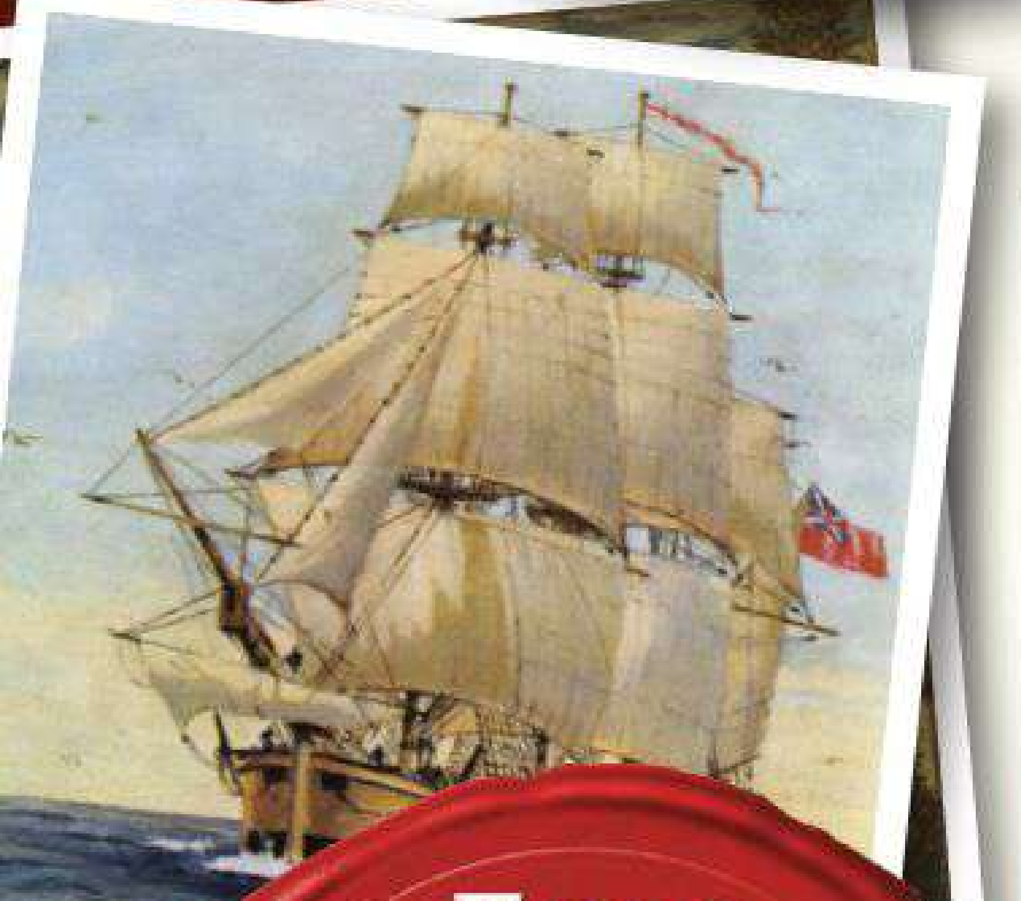

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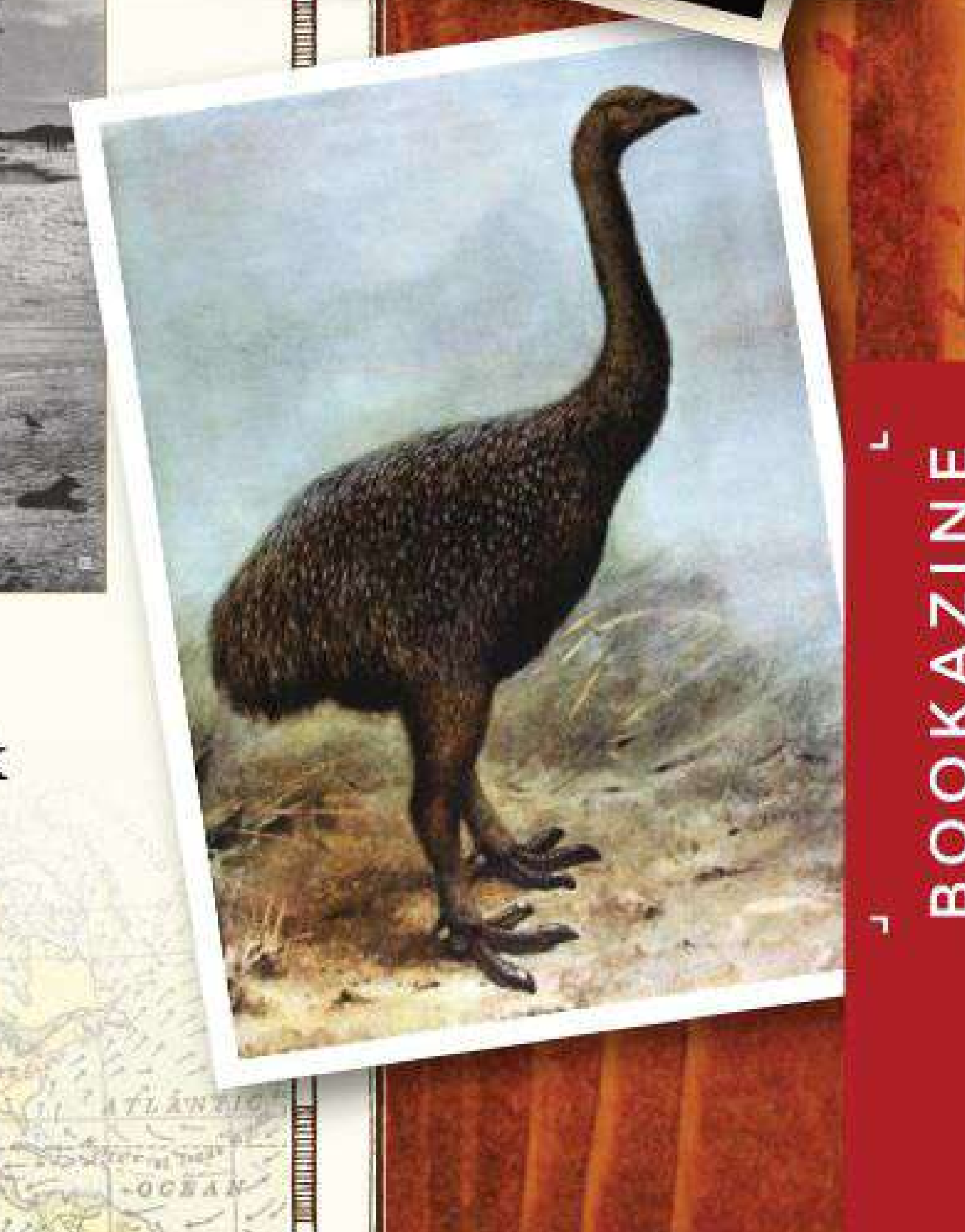

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